

CLAYTONIA

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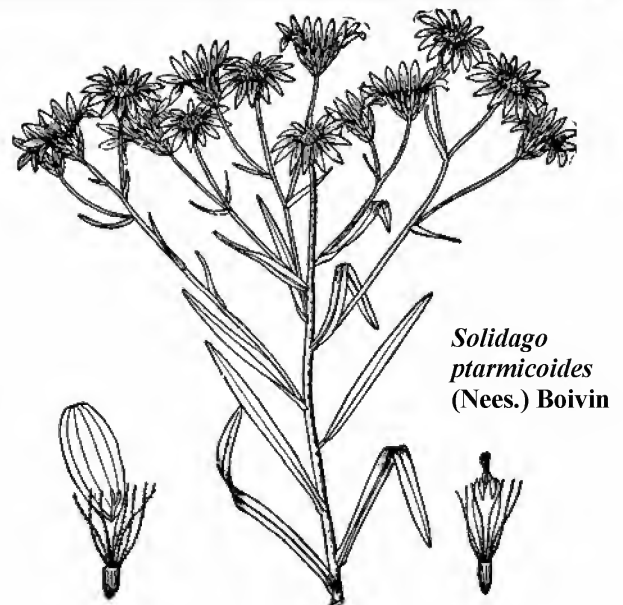
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White-Flowered Goldenrod (*Solidago ptarmicoides*) Rediscovered in Northwest Arkansas after 125 Years!

by Theo Witsell

Joe Woolbright, of Ozark Ecological Restorations Inc., made a significant discovery late last summer while he was conducting restoration work at Chesney Prairie Natural Area in Benton County. While walking through the drier, upper end of the prairie, he noticed a number of white-flowered composites that he hadn't seen before, despite scores of trips to the site over the past several years. After some study, Joe correctly identified the plants as *Solidago ptarmicoides*, the white-flowered goldenrod, a rare species not documented from that part of the state since 1879.



White-flowered goldenrod is rare in Arkansas and is tracked by the Arkansas Natural Heritage Commission as an element of special concern. It is a species of native grasslands (prairies and glades) and of open savannas and dry, rocky woodlands – all habitats that have seriously declined throughout the region. Prior to Joe's discovery, it was known in Arkansas from just three collections, from scattered sites in the Ozark Mountains. In September of 1879, it was collected by F. Leroy Harvey from "flint hills" in Washington County—a site that was never relocated. The next known Arkansas record is from Mary Alice Beer of Fairfield Bay, who collected it in Van Buren County on 31 August, 1990. On a field trip during the Fall 2004 ANPS Meeting, Mary Alice showed a small group of ANPS members a second, nearby population that she found in a power line right-of-way in Cleburne County. She also showed us the Van Buren County site but explained that she had not seen plants there in several years. It was next collected on 1 August 1991 by Phil Hyatt from a sandstone glade on the Sylamore Ranger District of the Ozark National Forest in Baxter County.

In his *Atlas and Annotated List of the Vascular Plants of Arkansas* (2nd edition, 1988), Dr. Ed Smith had an "R" listed for this species in Benton County, meaning that he had

knowledge of a reliable report that was not substantiated by a specimen. There is, however, no record of where that site was, when the plant was observed, or who reported it. It is possible that it was observed by someone at the Rice Prairie near Siloam Springs, where a number of botanical trips were made by botanists prior to 1988. Unfortunately, this site was destroyed forever when it was converted to a bean field in 2000. With the destruction of the Rice Prairie, there are only three small remnants of native prairie left in Benton County: Chesney and Stump Prairies northwest of Siloam Springs, and Searles Prairie in Rogers. Stump and Searles Prairies should be intensively checked for this species next year.

Solidago ptarmicoides looks a lot like a white-flowered species of aster. In fact, it was long included in that genus, as *Aster ptarmicoides*, until it was observed that it hybridized readily with some species of goldenrod. It is a member of the flat-topped section of goldenrods, which some authors put in the segregate genus *Oligoneuron* (as *Oligoneuron ptarmicoides*). In Arkansas, white-topped goldenrod differs from our white-flowered species of aster by having both white ray and disk flowers (as opposed to white ray flowers and yellow disk flowers in the asters) and a flat-topped inflorescence or flower arrangement. These differences can be subtle and will probably require the collection of a voucher specimen for confirmation.

Woolbright, who manages Chesney Prairie under contract with the Arkansas Natural Heritage Commission, believes the sudden appearance of the species at Chesney Prairie is likely a direct result of the reintroduction of (prescribed) fire to the area in recent years. He led a field trip to the site during the 2004 Arkansas Grass Identification Workshop and specimens were collected to voucher the occurrence. These will be deposited at the U of A Herbarium at Fayetteville and the herbarium of the Arkansas Natural Heritage Commission in Little Rock. If you believe you have found a site for this species, please contact the Arkansas Natural Heritage Commission at 501.324.9615 or email theo@arkansasheritage.org.

Montgomery County Floristic Inventory Yields 1,111 Taxa of Vascular Plants

Travis Marsico, who recently graduated with a Masters degree in botany from the U of A Fayetteville, and is now pursuing a PhD in Plant Ecology at Notre Dame University, has documented 1,111 kinds of vascular plants from Montgomery County, Arkansas. The Montgomery County Flora was completed as part of Travis's Masters Thesis. He also completed an ecological study of the endemic Arkansas plant Browne's waterleaf (*Hydrophyllum brownei*) [see *Plant of the Issue- ed.*]. Travis not only documented what species were

found in the county, but where they were found, what habitats they were found in, how many and which are considered native (975), how many and which are introduced (136) and which of these are considered invasive, and which are tracked as rare or vulnerable by state and federal agencies (58 total). A detailed report on his findings is being sent to the botanical journal *Sida* for publication. Congratulations to Travis on his thesis and graduation!

Ouachita and Ozark-St. Francis National Forest Plans Available for Review and Comment

The official public comment periods for the *Proposed Revised Forest Plans and Draft Environmental Impact Statements* for both the Ouachita and Ozark-St. Francis National Forests are open and the draft plans are available for review. These plans will determine how the forests will be managed for the next 10 to 15 years and the Forest Service is soliciting public comment until May 20, 2005. The documents can be downloaded from the following websites: Ouachita National Forest = <http://www.fs.fed.us/r8/ouachita/>, Ozark-St. Francis National Forest = <http://www.fs.fed.us/oof/ozark/>.

Gates Rogers Foundation Announces Project

The Gates Rogers Foundation, a 501c-3 non profit organization established in 2001, announces its initial project: the "South Fork Native Plants Preserve" located on Greer's Ferry Lake. The Foundation, established by an endowment from Mr. Victor C. Gates of Choctaw, Arkansas, intends to establish a Native Plants Preserve on the land donated to the Foundation by Mr. Gates. The land, encompassing an entire peninsula on the lake, is located on the South Fork of the Little Red River near point 14A on the lake map. The Foundation has hired Arkansas Native Plant Society members Brent Baker and Theo Witsell to provide a Comprehensive Floristic Inventory and Habitat Assessment of the project land. The Gates Rogers Foundation is committed to protecting and preserving Arkansas native flora and fauna in a manner that ensures and encourages public access, esthetic appreciation, and an understanding of the importance of biodiversity preservation. The Foundation is dedicated to the development, application and dissemination of ecologically sound land management practices that further this mission.

For more information visit their website at www.gatesrogersfoundation.com.

PLANT OF THE ISSUE: BROWNE'S WATERLEAF



Browne's waterleaf (*Hydrophyllum brownei*). Photo by John Pelton.

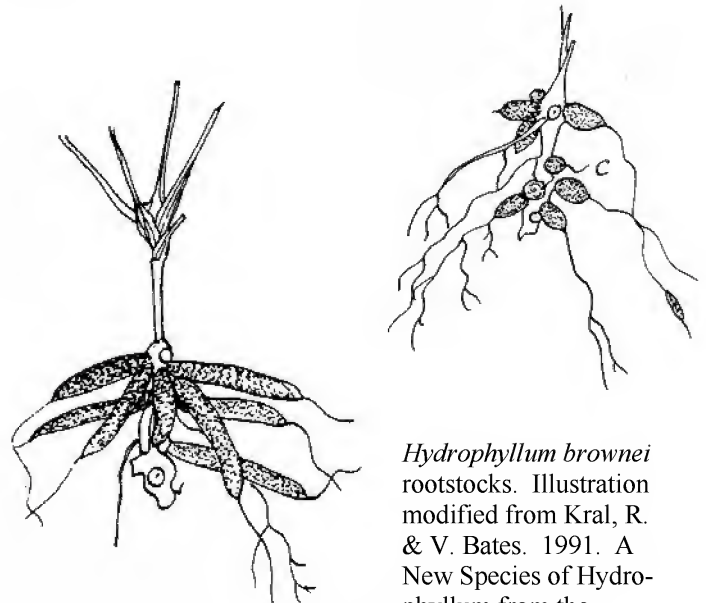
Discoveries of new plant species don't happen everyday, especially not in temperate parts of the world, or in areas as well-explored as Arkansas. That doesn't mean, of course, that we don't still have species to discover here, just that it is really exciting when they are found! The plant of this issue is one that was described fairly recently from the Ouachita Mountains. Browne's waterleaf (*Hydrophyllum brownei* Kral & Bates) was described new-to-science in 1991 by Dr. Robert Kral of Vanderbilt University and Vernon Bates, who was exploring and collecting plants in the Ouachita National Forest of western Arkansas and eastern Oklahoma. Browne's waterleaf is known only from seven Arkansas counties, all in the Ouachita Mountains, and is the only species of *Hydrophyllum* known from that region.

The species is globally rare, carrying a global rank of G2 (typically meaning there are just 7-20 known viable occurrences in the world, or having some other factor that contributes to its being vulnerable). It grows on shady, rich, wooded stream terraces and can be found in bloom from early April to early May. Though there are specimens of the plant (now known as Browne's waterleaf) dating back to 1837 (collected by Dr. George Engelmann along the Saline River), it wasn't until Bates collected a proper specimen (with roots included) that it was understood that the material from the Ouachitas represented a new species. The 1837 specimen, and all others collected from the Ouachitas prior to Bates' specimens, were "top-snatched" (only the above ground

portions were collected) and all were identified as the superficially similar species *Hydrophyllum macrophyllum*. The most obvious difference between *H. brownei* and *H. macrophyllum* is the presence of obvious "sweet-potato-like" tuberous thickenings on the roots of *H. brownei* (there are also less obvious, but equally diagnostic differences in flower and hair structure between the species). These tubers are absent from all other species of *Hydrophyllum*.

With the addition of *H. brownei* to the state's flora and the subsequent exclusion of *H. macrophyllum* (which grows only east of the Mississippi River), we now have three species of this genus in Arkansas. *Hydrophyllum appendiculatum* and *H. virginianum* both occur in the Ozarks, but are not known from the Ouachitas (or any other part of the state).

There are now a total of 27 known sites for Browne's waterleaf in Garland, Howard, Montgomery, Pike, Polk, Saline, Sevier, and Yell Counties. A number of these are in the Ouachita National Forest, but two of the easiest places to see it are at the Cossatot River State Park Natural Area (along the river below the visitor's center) and at Big Fork Creek Natural Area in Polk County.



Hydrophyllum brownei rootstocks. Illustration modified from Kral, R. & V. Bates. 1991. A New Species of *Hydrophyllum* from the Ouachita Mountains of Arkansas. Novon 1:60-66.

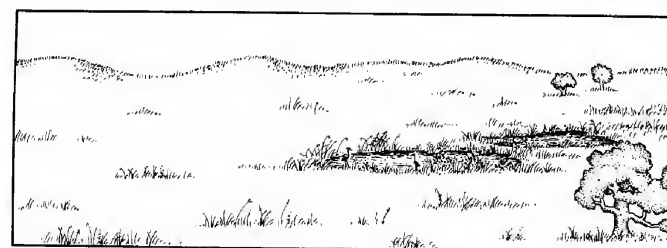
Prairies Part 3: The Role of Fire in Prairies, Savannas, and Woodlands

by Theo Witsell

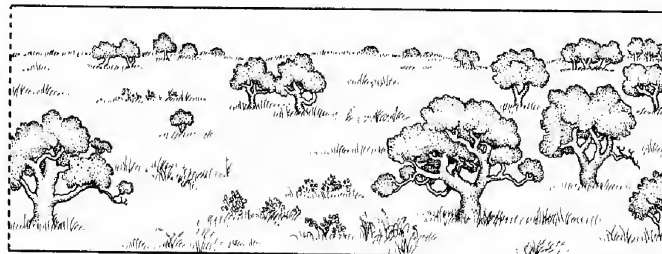
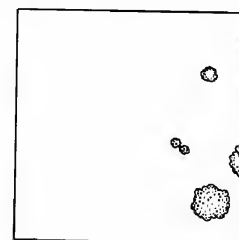
As mentioned in previous issues of *Claytonia*, there are three main ecological processes that work to maintain prairie and woodland ecosystems. These are drought, fire, and native grazing. This article will focus on fire – its role historically, how it works to shape plant communities, and how it is used in the restoration of prairies, savannas, and woodlands.

In Arkansas, as in other states on the eastern edge of the tallgrass prairie biome, fire is the major ecological process responsible for the maintenance of most of our native grasslands and associated woodlands. These ecosystems were made by and for fire. The plants are dormant in the late fall and winter and the above ground vegetation is flammable for a large part of the year. Many of the herbaceous plants native to this ecosystem have most of their biomass below ground and can withstand repeated fires. In presettlement times, when the fall storms would arrive and lightning would strike on a large expanse of dry grassland, it could burn for miles until it came to a natural firebreak or rainstorm. Woodlands along streams and at the edges of grasslands would burn as well, becoming more open in times of frequent fire and more dense in periods without much fire. Native Americans, and in some cases European immigrants, would also burn the prairies and woodlands to make travel easier, to improve wildlife habitat, and to encourage the fresh shoots of the grasses which were favored by bison, and later, by cattle.

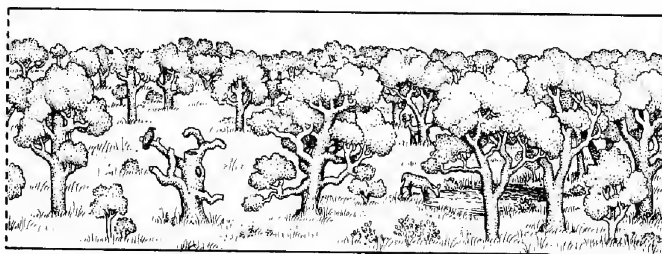
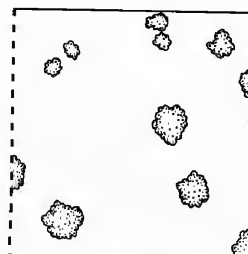
In the context of this discussion, as we will talk about the continuum of habitats from prairie to forest, we will need to define four very specific terms: **prairie**, **savanna**, **woodland**, and **forest**. These relate to the density of trees on a landscape and, while they are sometimes defined by a specific number of trees per acre, or a certain basal (trunk) area or canopy area per acre, we will define them



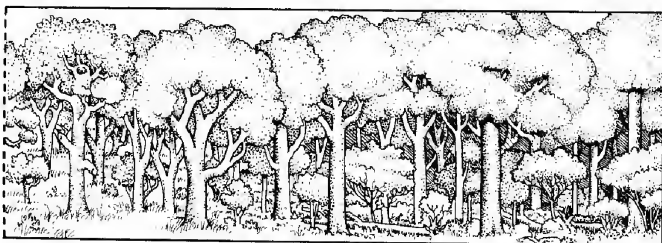
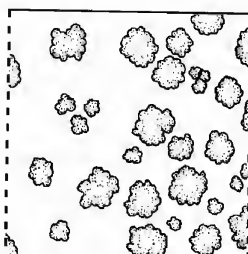
A. Prairie: Grassland with few or no trees.



B. Savanna: Grassland with scattered trees. Trees may be oaks or pines, well-spaced or in clusters. May have extensive areas of shrubs and tree resprouts.



C. Woodland: An open forest with a vigorous turf of grasses and flowers throughout the growing seasons. Depends on frequent fire. Many trees have spreading lower limbs. Bright enough for oak or pine regeneration (i.e. less than 80% canopy cover).



D. Forest: Closed canopy—may be of fire tolerant species (oak & pine) or fire intolerant species (maple, beech, etc.) on infrequently burned sites. Shade tolerant species of understory trees and shrubs are present. Herbs are mostly spring ephemerals (dormant in summer) or are scattered and thin.

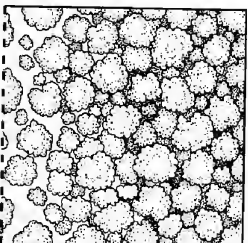


Figure 1. The prairie-forest continuum. Modified from *The Tallgrass Restoration Handbook* (Island Press).

more loosely here. For this article, we will consider the following: **prairie** (few or no trees – dominated by prairie grasses and forbs), **savanna** (very few scattered trees, with an herbaceous layer dominated by prairie species), **woodland** (more trees than a savanna, but less than a forest, with a mix of prairie and forest herbaceous species), and **forest** (dense, closed canopy with a shade-tolerant understory) [see figure 1]. When we use the term “prairie species” we mean those native plant species characteristically found in prairies and glades that need full sunlight, and are fire tolerant or dependent. *

How Does Fire Work?

The most obvious function of fire in prairie and woodland ecosystems is that fire suppresses woody plants (shrubs and trees) and favors herbaceous species of forbs and grasses. Savannas and open oak woodlands survive because of fire, without which brush and shade-tolerant trees would invade. Fire suppresses woody plants in two ways. First, it stimulates the prairie plants to form a vigorous sod, which prevents the establishment of woody plant seedlings. Second, fire kills the above ground portions of smaller woody plants, weakening brush (but rarely eliminating it entirely). Deciduous woody plants will resprout from the base but conifers like pines and eastern redcedar (a major invader of prairies and woodlands in Arkansas) will be killed completely provided all the needles are brown following the fire. Even a small percentage of green needles can carry these species through, however. Needless to say, the goal when burning a woodland or savanna is not to kill the largest trees. Whether this is a pine system or an oak system, the dominant (largest) trees are, by their nature, fire tolerant. They have bark thick enough to withstand fires that would kill the fire-intolerant species that have invaded the site since fire suppression, or even smaller specimens of their own species.

Another obvious result following fire is that more plants flower, produce seed, grow taller, and are more robust than the previous year. This is in part due to the removal of leaf litter and thatch but is also likely the result of increases in the available nutrients in the soil. Fire does this through indirect stimulation of soil microbial activity and by releasing small amounts of nutrients from the ash. Following a fire, careful observers might also notice a decrease in cool-season invasive Eurasian weeds (exotic species which originated in the cool meadows of Europe). This is the result of a not-so-obvious effect - fire lengthens the growing season for most native prairie plants and shortens it for many exotic Eurasian weeds. Fire lengthens the growing season for native prairie species (which do best in warm soil) by removing the leaf litter and thatch and exposing a darkened soil surface to the warming rays of the sun. In the absence of fire, the light-colored leaf litter reflects the sun and acts like a blanket, insulating the ground, slowing the soil-warming process and smothering new seedlings. This fire effect may increase the growing season by as much as four weeks. On this same note, fire shortens the growing season for many cool-season weeds (which go dormant during the heat of the summer) by warming the soil and causing the roots of these species to stop growing. Also, fall burns done after the native species have gone dormant can burn off several inches of growth on the cool-season plants, weakening them further.

Restoring Prairies, Savannas, & Woodlands With Fire

The results following a burn can be dramatic! Species that were there before in very low numbers can suddenly become common. It is not at all uncommon for species that were not there before to suddenly appear, sometimes in great numbers. These were present in the seedbank, or perhaps were barely hanging on - a single small leaf getting just enough light to keep the plant alive, but nowhere near enough to flower. Under the right conditions, this sort of response can be seen following a single burn, though these sorts of results may take several burns to achieve.

Once fire is reintroduced to a forest or woodland, it will allow more light to penetrate, which is good for most plants. This, in turn, will stimulate herbaceous plant growth, which increases the fuel for the next fire. The next fire might then be more intense, which will allow even more light to penetrate, stimulating even more herbaceous plant growth, and so on. If, however, fire is excluded for a long enough period (just a few years in some cases), the woody plants will again become dense, the herbaceous plants will die out, and low-intensity fuels (like leaf litter) will dominate. It should also be noted that when a forest reaches a certain density, fire alone will not be effective in restoring it to woodland or savanna conditions. For example, ground layer fuels in an Ozark glade that has been completely overgrown with cedars for a number of decades will not support a fire hot enough to kill the cedars and begin the cycle of reopening the glade. In cases like this, a certain percentage of the cedars (or other trees) will have to be mechanically removed to allow the herbaceous fuels to build up to a level where fire will work its magic.

Benefits to Wildlife

The benefit of fire restoration to the wildlife native to these ecosystems can also be dramatic. There is more herbaceous cover in a burned system, which is good for many animal species. There are more flowering plants, so butterflies and other nectar feeding insects have more food. Quail and other grassland bird species (many of which are in decline) need this open habitat structure. Specialist insects (including many butterflies and moths) that need specific prairie plants benefit from increased populations of their host plants. There are legitimate concerns that burning an entire isolated prairie or savanna remnant will do harm to insect and other animal populations. This can be avoided by leaving sizable portions of the area out of the burn unit in order to leave a refuge for these animals. These will then recolonize the burned areas the following year and reap the benefits of increased flowering, seed set, and plant vigor. Timing of a burn can also be important to wildlife.

Where Was Fire Historically?

Today's landscape is so different from that of the past that it is hard for us, today, to understand the magnitude of fire's role in shaping plant communities in Arkansas historically (and prehistorically). Early explorer and settler accounts can provide

us with a glimpse into this past character in many areas. Many of these accounts described large areas of the Ozark and Ouachita Mountains as being treeless on the ridges with open oak or pine woodlands and savanna on the slopes, and forests only in the valleys (and in fire-protected areas in canyons and on some north- and east-facing slopes). In the absence of fire, following the fragmentation brought on by settlement, this open landscape became encroached by the steady march of woody species, and prairie openings, savannas, and woodlands transitioned to shrublands and forests.

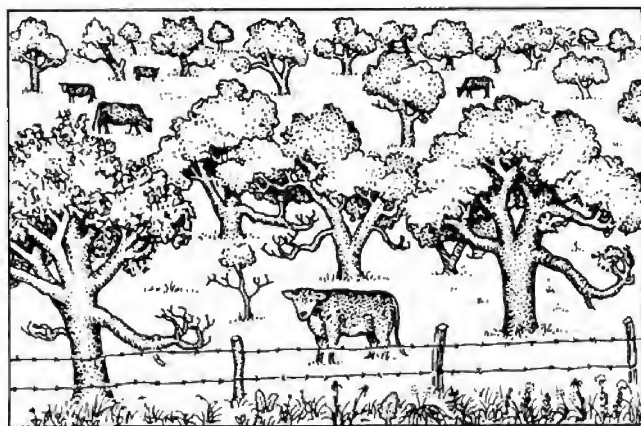
Nowhere in our region, perhaps, is this loss of open habitat more evident than in the rocky glades and hilltop prairies of the Ozark Plateau. When Henry Rowe Schoolcraft traveled through the White River Hills (in what is now northern

Arkansas and southern Missouri) on December 29, 1818, he described the character of the land in the following passage:

“The country passed over yesterday, after leaving the valley of the White River, presented a character of unvaried sterility, consisting of a succession of limestone ridges, skirted with a feeble growth of oaks, with no depth of soil, often bare rocks upon the surface, and covered with coarse wild grass; and sometimes we crossed patches of considerable extent, without trees or brush of any kind, and resembling the Illinois prairies in appearance, but lacking their fertility and extent. Frequently these prairies occupied the tops of conical hills, or extended ridges, while the intervening valleys were covered with oaks...”



A: In 1800 the savanna looked as it may have looked 5000 years ago. In that period, it would have most likely spent some time as both prairie and forest.



B: 1910. Pasture. This site had been a pasture now for half a century. Despite the absence of fire, the overall savanna structure and much of the species persisted because grazing kept brush down, although many savanna herbs, butterflies, etc., survived only on an adjacent railroad right-of-way, which remained ungrazed and burned regularly from sparks from passing trains.



C: 1980. “Preserve”. The site was acquired in 1960 by a conservation agency, but at that time there was little appreciation of the savanna’s need for fire. At first the native fauna and flora began to recover from 120 years of grazing, but at the same time brush began to invade.



D: 2010. “Preserve”. The understory herbs have been almost entirely shaded out, and most original plant and animal species are gone. Unlike an original forest, this new forest has little biological diversity. Most of the original (and now rare) species of this site have been lost—replaced by relatively common, aggressive species.

Figure 2. Savanna succession without fire. These drawings show one fate of a hypothetical “preserved” savanna that receives no burning or other restoration. Modified from *The Tallgrass Restoration Handbook* (Island Press).

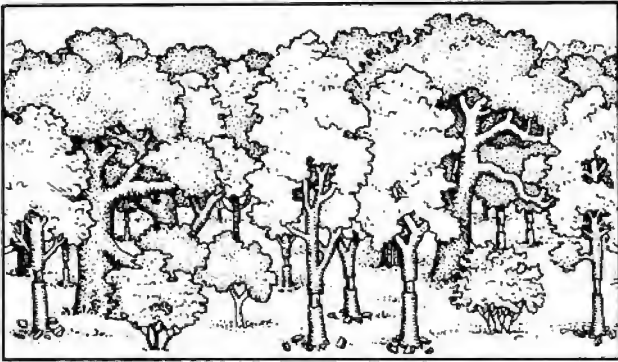
Schoolcraft's rocky barrens and prairies, of course, were not really characterized by "unvaried sterility" in the botanical sense. They were dense with a tremendous diversity of native grasses and forbs. Today, however, one is hard-pressed to find more than a trace of this sort of landscape in this area. There are a few small open areas, mostly in areas that are used as hayfields or kept open by periodic mowing in powerline or gasline rights-of-way. The majority of these areas, in the absence of fire, are now dense and often impenetrable monocultures of the native, but aggressive, eastern redcedar (*Juniperus virginiana*).

Another striking passage in Schoolcraft's journal is his description, written on December 9, 1818, of Sugarloaf Prairie and Sugarloaf Knob, just north of present day Lead Hill, Arkansas:

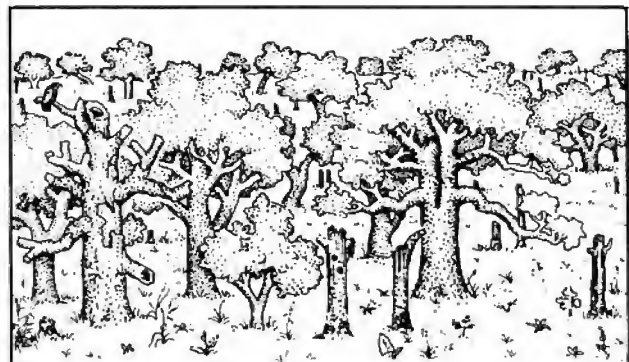
"...arrived at an early hour in the afternoon at the house of a Mr. Coker, at what is called Sugarloaf Prairie. This takes its name for a bald hill covered with grass rising on the verge of

the river alluvion on the west side of the [White] river, and is discernible at the distance of many miles."

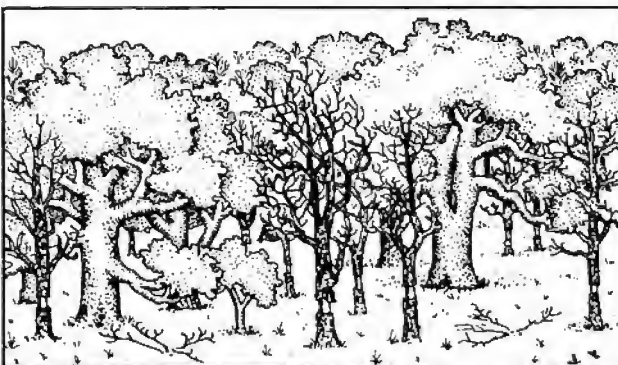
Today Sugarloaf Knob (located 1.5 miles NE of Lead Hill in Boone County, Arkansas) is wooded to the top, mostly with cedars, but with several species of hardwoods as well. Last spring I explored some parts of it with Linda Ellis, John Logan, Tim Smith, and Paul McKenzie (all experienced plant hunters from Missouri). We found vestiges of Schoolcraft's Sugarloaf Knob tucked away in a few roadsides, powerline cuts, and in the few open areas left on the knob. In these little nooks we found native grasses and plants of the showy beard-tongue (*Penstemon cobaea*), fringed puccoon (*Lithospermum incisum*), Trelease's larkspur (*Delphinium treleasei*), smoke tree (*Cotinus obovatus*), Nuttall's dwarf morning glory (*Evolvulus nuttallianus*), and Crawe's sedge (*Carex crawei*), among many other now uncommon glade and grassland species. Still, most of the knob was thick with woody plants – nothing beneath them but a few shade-tolerant species and thick layers of leaves and cedar duff.



A: 1981. Restoration begins. The site was burned in the fall of 1980, and the girdling of invasive tree species was begun in May 1981.



C: 1990. Restoration "completed". Aside from regular prescribed burning, this site may now need little additional work.



B: 1983. Intensive restoration. For the first few years, aggressive weeds and brush were carefully controlled. Seeds gathered from nearby threatened remnants were broadcast throughout the site.



D: 2010. Nature proceeds. In centuries to come, such sites may be the only places at which hundreds of savanna species survive. The restored savanna is different from the 1800 savanna, but it is a natural descendent from it and contains most of its original species.

Figure 3. An alternative, restoration-based outcome for the savanna remnant in figure 2, beginning with its condition as shown in 1980. Modified from *The Tallgrass Restoration Handbook* (Island Press).

Many other examples of our loss of open grassland habitats to fire suppression can be found in interpretation of the original General Land Office (GLO) survey notes** for the state. By and large, these tell us that much of the forest in Arkansas is considerably more dense today than it was historically. Similarly, remnant glades and prairies are smaller in many areas today than they used to be. We know that in prairie regions, wooded areas along streams are larger and more dense than they were historically. For example, we can look at the 22 acre Konecny Grove Natural Area in the Grand Prairie area of Prairie County. Today, Konecny Grove is a wet sugarberry/elm/ash/hawthorn woodland/forest with a nearly closed canopy. A number of plants that occur in the understory of this woodland (particularly around the edges where sunlight can penetrate) provide hints that it was once much more open than it is today.



One of the few remaining intact savannas in Arkansas (with a small saline soil barrens in the foreground) is on this site at Fort Chaffee Military Reservation. It has only persisted due to the frequent fires ignited on a nearby bombing range. Photo by Theo Witsell/ANHC.

Fortunately, the western boundary of Konecny Grove lies on a section line so we can get a glimpse into the past character of the area using the survey notes. Indeed, the notes, recorded on December 3, 1815, give the character of the present-day Grove as “level second rate prairie”. In fact, the surveyor made a specific note indicating that he didn’t encounter any trees until 1/16 mile south of the *southern boundary* of the present day Natural Area where he “entered woods”. This provides evidence for ecologists’ suspicions that, under a more natural fire regime, the riparian woodlands in the prairie were dynamic shrublands which would increase in times of fewer or less intense fires, and recede or give way to prairie in times of more frequent or intense fires. This guides modern day management, using fire and perhaps mechanical thinning of the woods to try and restore the pre-settlement vegetation structure to an area (as the Natural Heritage Commission is doing at Konecny Grove).

So where does that leave us today? How do we know if an area would benefit from the reintroduction of fire? Almost

any area that has naturally occurring prairie plants will benefit from a burn. Clues to fire-suppressed woodlands are many and are easy to interpret with a little practice. They include the presence of prairie species in sunny spots like roadsides and powerline rights-of-way. Sites with swaths of pale purple coneflower, little bluestem, big bluestem, Indian grass, butterfly milkweed, etc. are likely former woodlands. These species didn’t just arrive on the roadsides and utility lines, those are the only spots left where there is enough sunlight for them to express themselves and bloom. Another good clue is the presence of old, open-grown oak trees (especially post oaks, but other species too). These are easily spotted by their large diameter, often twisted trunks and spreading limbs (which indicate that they grew in an open situation). They often have the tops broken out of them and are surrounded by younger, densely spaced trees with straight trunks and compact branches. Also look for grassy openings in conjunction with these large oaks.

One excellent and easily seen example is visible from I-40 between Little Rock and Conway... Traveling north from Little Rock, just before you leave Pulaski County, you will drive across a broad, flat abandoned floodplain that is now an agricultural field (this is a well-known speed trap by some of us!). At the northern end of this floodplain is a large east-west trending ridge on the right hand (east) side of the highway. Several prairie openings are still visible on this hillside, dotted with scrubby oaks in the typical savanna style. These openings get smaller and smaller with the passage of time – the ridge is now covered in small oak saplings and a number of cedars. Just over the ridge, however, is the Bell Slough Wildlife Management Area where the Arkansas Game and Fish Commission has used prescribed fire to restore some of these wonderful ridgetop savannas which can be accessed from their interpretive trail. Check it out for yourself.

* For a complete list, check out “Appendix A: Vascular Plants of Midwestern Tallgrass Prairies” by Doug Ladd in the book *The Tallgrass Restoration Handbook for Prairies, Savannas, and Woodlands*, edited by Stephen Packard and Cornelia F. Mutel and published by Island Press and the Society for Ecological Restoration. This book is THE one-stop source for practical information on the ecology and management of these ecosystems. Excellent!

** Beginning on November 10, 1815, the entire Louisiana Purchase was surveyed according to a grid made of 1 mile by 1 mile cells, or sections. These sections were grouped into 6 mile by 6 mile (36 square mile) townships which were identified by their position relative to the baseline and the principal meridian (e.g. Township 3N, Range 16W, Section 18 is section number 18 in the township located in the third position north of the baseline and in the 18th position west of the principal meridian). When the surveyors walked this grid, they recorded several bits of information that are useful to modern day ecologists. First, they recorded the position, type, and size of four witness trees at each section and quarter section corner (provided there were trees within a reasonable distance). This allows us today to determine the forest type and a rough measure of forest density at the time of the survey. They also recorded information on the character of the land over the last mile surveyed, which included the timber quality and type (if any), the understory (shrub and herbaceous layer), and quality of the soil. Since this grid is still in use today, we know exactly where the surveyors were and when they were there.

ARKANSAS NATIVE PLANT SOCIETY SPRING 2005 MEETING

APRIL 15-17, 2005

**South Arkansas University Tech
Charles O. Ross Center
746 California Ave. SW
Camden, AR 71701**

A Welcome from Jason Anders

We Camden "natives" are looking forward to having the Society meet here in April. We'll do our *best* to take your mind off the IRS on tax day and refocus it on the natural beauty of Arkansas and the work of the ANPS.

Our meetings Friday and Saturday nights will be in the Charles O. Ross Center, a part of South Arkansas University Tech, but an in-town location rather than their main campus which is 15 miles to the east of town.

The Ross Center is very easy to find. If you don't have access to Mapquest.com, then the easiest way to find it is to look at an Arkansas Highway map and find the spot in Camden where Highway 79 South turns from a four-lane divided highway into a two-lane. That intersection (actually a pair of off-ramps) brings you off the four-lane overpass and down to the two-lane passing under it. At the end of the off ramp, go left (North) on 79B, which is California Avenue. You will see the Golden-Hart Ford dealership on your left and just after it, the Ross Center, also on your left.

When you arrive, we'll have local maps, restrooms, refreshments, directions to hotels and eateries, and lots of native plant enthusiasm ready to greet you.

At press time, we are still finalizing our Saturday night program, but let me pitch a word here for our roundtable on Friday night. The Society is 25 years old this year, and we would like to observe this milestone by looking back at the work accomplished and the members who contributed so much to our mission. If you have photographs or slides of prior meetings and trips, please bring them to share. Many of our charter members are still active, so we certainly hope to see you here to help reflect and celebrate.

We also want to spend some brainstorming time as a purposeful team, looking forward to the direction we will take

in the next 25 years. Be thinking ahead of time, as well as bring questions you might have about any aspect of specific plants, conservation, preservation, and the like.

If you need assistance in driving directions, lodging information, or anything else, please contact me at any hour at work or home.

jasonanders@earthlink.net
Jason.anders@aerojet.com

Work Phone: 870-574-3353
Home Phone: 870-836-0452.

Schedule of Events

Friday, April 15th

4:00-7:00 p.m. Registration and Refreshments, Ross Center

7:00 p.m. Presentation on the Flora and Ecology of the Sand Barrens of the Poison Springs Area – site of the Saturday morning field trips, by Theo Witsell

7:45 p.m.- until ANPS at 25: Retrospective and Roundtable

**9:00 p.m. Executive Board Meeting
(Comfort Inn Conference Room)**

Saturday, April 16th

8:00 a.m. Leave Ross Center for Field Trips

11:30 a.m. Lunch

1:00 p.m. Leave Ross Center for Carl Amason's

5:00 p.m. Dinner

6:30 p.m. General Business Meeting, Ross Center

7:30 p.m. Program – Slide show by Rector Hopgood documenting the prairie restoration on his property in Morehouse Parish, LA

Sunday, April 17th

8:30 Members are invited to tour Thera Lou Adams' natives and gardens

LODGING INFO ON NEXT PAGE...

Lodging

We are proud to have two new motels in Camden, but from the pricing, they seem to be pretty proud of them as well. If economy is a priority, then a short 15 minute drive down Highway 7 South to Smackover, Arkansas, will save significantly and still be in a new motel.

The motels in town did give us a modest discount, and that rate is noted below. (All rates shown are before tax.) Please remember to mention ANPS to get the right rates quoted, and book by April 1st or the block of rooms held will be released.

Comfort Inn
#1 Ridgecrest Drive
Camden, AR 71701
870-836-9000

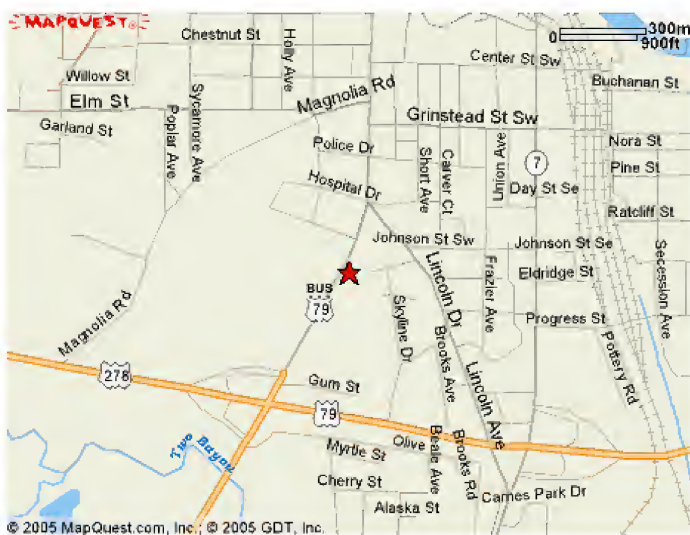
\$75 per night; NEW; closest to the Ross Center; many amenities, but NO PETS.

Holiday Inn Express
1450 Highway 278 West
Camden, AR 71701
870-836-8100

\$71.55 per night; NEW; many amenities, only 1 mile from Ross Center; pet friendly.

King's Inn
942 Adams Avenue South
Camden, AR 71701
870-836-2535
\$45.60 per night; about \$5 surcharge for double occupancy; 30 years old but not a dump; \$15 surcharge for pets.

Super 8
4403 Smackover Highway (Hwy. 7 S)
Smackover, AR 71762
\$56.95 per night; clean and new; save even more if booked on the internet; pet friendly; 15 minutes south of Camden, but on a 4-lane divided highway.



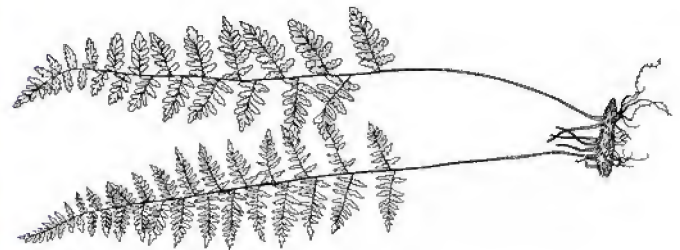
MAP TO THE ROSS CENTER

County Road Crews Wiping Out Native Plants by Switching to Herbicides

A number of ANPS members are alarmed at the increasing number of Arkansas counties that are switching from the traditional mowing of county roadsides to the spraying of non-specific herbicides to control roadside vegetation. These non-specific herbicides kill all the plants in an area, not just woody species, broad-leaved species, etc.

Saline County sprayed the majority of its county-maintained roadsides last year and wiped out a number of significant native plant areas, including one of only two sites in the Ouachita Mountains where the Alabama lipfern (*Cheilanthes alabamensis*) was known (the only other is in Hot Springs National Park). Worse still, a number of streams in Saline County were sprayed right over and dead alders, buttonbushes, and other plants still stand as witness right in the channel! As a consequence of this herbicide spraying, many roadsides are beginning to erode, some severely. Since road ditches act as de-facto streams, this channels this excess sediment (and herbicide runoff) directly to the streams in an area. Furthermore, last fall saw a noticeable increase in exotic weeds in these road ditches, some of which can become problematic. In many cases these weeds first appeared following the spraying in areas that were previously dominated by non-aggressive native species.

This spraying, done to save money on mowing costs, will likely cost more in the long run when these erosion problems have to be fixed. It is short-sighted, ugly as can be, is lowering the quality of life for residents and visitors alike, and is destroying some of our most accessible and visible displays of native wildflowers. **IF YOU KNOW OF OTHER COUNTIES THAT ARE SWITCHING TO HERBICIDES, PLEASE CONTACT THE CLAYTONIA!** The ANPS needs to document where this is happening so that we can work to stop it, or at least work with the counties so that they don't spray important native plant areas.



Alabama lipfern (*Cheilanthes alabamensis*). Gone forever from Saline County?...

ARKANSAS NATIVE PLANT SOCIETY

FALL 2004 GENERAL MEETING MINUTES

**Peace Lutheran Church
Greer's Ferry, Arkansas
September 25, 2004
8:40 p.m.**

President Burnetta Hinterthuer convened the General Meeting and requested a motion to accept the minutes of the Spring ANPS General Meeting as previously printed in the Claytonia. Clint Sowards so moved, and Mary Ann King seconded. The minutes were approved without dissent.

Treasurer Barbara Little-Schoenike presented the Treasurer's Report in print. Barbara presented the Treasurer's Report in print as review before the formal presentation to the general membership. Current balance as of September 25th was \$27,446.86, with an Operating Fund balance of \$7,902.35, and Scholarship and Awards funds totaling \$19,544.51. The total balance of funds was up just slightly over \$1,000 since the Spring Meeting, but that was with no scholarships awarded since the March 2004 report. Barbara reported that approximately \$825 had been raised in the auction on Friday night and that another \$500 had come into the Society from the Fall Meeting registrations and tee shirt sales. These figures were incidental, occurring after the Treasurer's Report had been prepared and submitted. Rob Robinson moved to accept the report as submitted, with Lana Ewing seconding. Motion carried unanimously.

Theo Witsell noted that the ANPS website's information had fallen out of date but that he had volunteered to attempt to update the webpage for the Society.

COMMITTEE REPORTS:

Jason Anders, representing the Nominating Committee, presented the following slate of nominees for office:

Theo Witsell, Editor
Barbara Little Schoenike, Treasurer
Jude Jardine, Secretary
Brent Baker, Vice President

Theo, Barbara, and Brent were submitted in the normal officer election rotation, and Jude was to fill the Secretary's post for one year to complete the vacancy created by Judy Logan's resignation. Jason reported that Burnetta was promoted to President recently following Linda Gatti Clark's resignation, and that the Executive Board had requested Mary Ann remain one more year assisting the Board as Past President. The nominating motion came from committee and therefore carried their own second. There were no nominations from the floor and the slate passed unanimously by acclamation.

Jason invited the membership to attend the Spring General Meeting to be held in Camden on April 15-16, 2005. He also announced the Fall Meeting would be held in Ft. Smith.

The Scholarship and Awards Committee, represented by Eric Sundell, announced there were no scholarships being awarded at this time, but Theo Witsell was being granted the Carl Amason Conservation Award in recognition of his tireless work in promoting the goals of the Society. Eric added that Carl Amason, who was unable to be present in person, had been consulted previously and enthusiastically endorsed the granting of the award to Theo. The award was granted with a \$500.00 stipend and Theo thanked the membership for the honor.

NEW BUSINESS:

Eric Sundell reported that Sarah Nunn, Curator of the U of A Herbarium had expressed gratitude for the efforts of ANPS members writing and calling the University in the recent successful campaign to preserve the Herbarium. President Hinterthuer added her thanks for members' efforts and introduced a motion from the Executive Board to again contribute \$5,000 to the Arkansas Flora Project, explaining that it would again be eligible for matching funds, doubling its benefit to the Project. The grant would be made from the Operating Fund. Broad support for the motion carried it unanimously.

Announcements followed. Jason Anders requested members contact him for any requests or suggestions for field trips in the Spring or Fall.

Dan Marsh explained that a new river walk in Ft. Smith would be a likely site to visit during the Ft. Smith General Meeting in the Fall.

Eric Sundell announced the Audubon Society would host a Tree Identification workshop would be held October 1-3 at Ferndale in West Little Rock. The classes would meet from Friday noon to Sunday noon and would cost \$160 per person, including room and meals.

Plans for Sunday field trips were finalized and a motion was made to adjourn, followed by numerous seconds and the meeting adjourned.

Respectfully submitted,

Jason K. Anders
Acting Secretary

Plant Images on the Internet

Compiled by Phillip Moore

The following websites are good places to find an image of a plant that you would like to see. Say you've keyed out an unknown plant but you want to see a picture of it, or you think a plant in hand sounds like it might be a certain species... check the following links to see how you did. Some of these are line drawings, others are photos of living plants, still others are scanned images of preserved specimens.

New York Botanical Garden Images

http://www.nybg.org/bsci/herbarium_imaging/imaginglinks.html

Fairchild Virtual Herbarium, Miami Florida - scans of their specimens <http://www.virtualherbarium.org/vh/db/main.htm>

published volumes of Flora of North America and images, except vol. 25 on efloras.org
http://www.efloras.org/flora_page.aspx?flora_id=1

Tennessee Herbarium - can use without permission "for educational purposes only"
<http://tenn.bio.utk.edu/vascular/vascular.html>

North Carolina's image gallery
http://www.hawriverprogram.org/NCPlants/Alphabetical_page.html

University of Texas image gallery
http://www.sbs.utexas.edu/mbierner/bio406d/PlantPics_archive.htm

Missouri Flora- great images but you can't download them
<http://www.missouriplants.com/index.html>

Tropicos images (Missouri Botanical Garden)
<http://mobot.mobot.org/W3T/Search/image/imagefr.html>

Noble Foundation plant images - <http://www.noble.org/imagegallery/>

Southwest Missouri herbarium's site
<http://biology.smsu.edu/Herbarium>
also has many links like Paul Redfearn's images of the ozark flora http://biology.smsu.edu/Herbarium/Plants%20of%20the%20Interior%20Highlands/photographs_of_flowering_plants.htm

Michael Moore's herbarology -
<http://www.swsbn.com/HOME PAGE/HomePage.html>

TAMU's image gallery

<http://www.csd.tamu.edu/FLORA/imaxxaca.htm>

seed images at Ohio State

<http://www.oardc.ohio-state.edu/seedid/all.asp?sort=family>

if you're looking for images of trees or wildflowers, the list of sites gets very large many sites are listed at usda's links to plant image sites http://plants.usda.gov/cgi_bin/link_categories.cgi?category=linkphotos

And lots of images at the USDA Plants Database
<http://plants.usda.gov>

New ANPS Members

The following people have joined the Arkansas Native Plant Society since the last issue of Claytonia:

Maury & Barbara Baker (Hot Springs, AR)
Suzanne & Ted Barnes (Camden, AR)
Wanza Barrett (Bartlett, TN)
Jennie Cole (Little Rock, AR)
B. J. & Gene Cutrell (Edgemont, AR)
Linda Davis (Conway, AR)
Loretta Dawson (Batesville, AR)
Jane & Frits Druff (Drasco, AR)
Brenda Embry (Huntsville, AR)
Sherrie Eoff (Garfield, AR)
Lisa Garvin (Hot Springs, AR)
Ina Gene Gill (Ash Flat, AR)
Garolyn Goettsh (Edgemont, AR)
Jerry & Valerie Goodman (Fairfield Bay, AR)
Carl & Marianne Guhman (Fort Smith, AR)
Mel Harness (Harrison, AR)
Norma James (Little Rock, AR)
Margaret Johnson (Memphis, TN)
Sandra Key (Jonesboro, AR)
Jeff & Marybeth Lohr (Fayetteville, AR)
Paul McKenzie (Columbia, MO)
Sid & Mickey Roberts (Shirley, AR)
Betty Murphy (Hot Springs, AR)
Tom Neale & Eileen Oldag (Little Rock, AR)
Mrs. Hugh B. Patterson (Little Rock, AR)
Don Richardson (Clinton, AR)
Jean Sexton (Hot Springs, AR)
David O. Shepherd (Fayetteville, AR)
Ann Stanley (Little Rock, AR)
Linda Warner (Waldo, AR)
Hope Wistrand (Bigelow, AR)
Aurora Zisner & Yarri Davis (Fayetteville, AR)

We welcome these new members to the ANPS!

Classifieds

Pinnacle Mountain State Park is looking for someone to fill the Arboretum Coordinator position at the Arkansas Arboretum. Duties include planning, managing, developing and maintaining the arboretum, which is located at Pinnacle Mountain State Park west of Little Rock. Knowledge of Arkansas' native tree and plant species, ecology, landscaping, plant propagation and management of plants in both the greenhouse and nursery settings is required. Other duties may include groundskeeping, trail maintenance and construction, and grant writing. The position is part time (1800 hours per year) and pays a salary of \$7.15 per hour. For an application and a more detailed job description call 501.340.3993 or visit www.arkansas.com. Or call Pinnacle Mountain State Park at 501.868.5086.

Invasives Species Field Guide Needs Help from ANPS Members—Jude Jardine is still working on updates to the Invasive Species Field Guide. She needs good photos of a number of common exotic invasive plant species. For a list of images needed, please contact Jude at jkjardine@netscape.com or call 501.676.5535.

I am working on a comprehensive floristic inventory of Scott and Yell Counties for my Masters thesis at the University of Central Arkansas at Conway. I am looking for sites within these two counties from which to collect plant specimens. If you own land in Scott or Yell Counties (or know someone who does), I would greatly appreciate the opportunity to collect on it. Thank you. Brent Baker / email: btb2001@hotmail.com / or write to: 1621 N 2nd / Dardanelle, AR 72834-2843 / Ph: 479.970.9143.

Carl Amason Conservation Award Given

At the Fall 2004 ANPS General Meeting, the Carl Amason Conservation Award was presented to Theo Witsell. The award included a \$500 stipend which will be used to fund his Masters thesis work on the Flora of Saline County. Theo wishes to take this opportunity to express his sincere appreciation for the honor and to thank the members of the Arkansas Native Plant Society, not only for the recognition, but for sharing their wealth of knowledge over the past decade.



Some Tricky Wetland Trees & Their Upland Counterparts

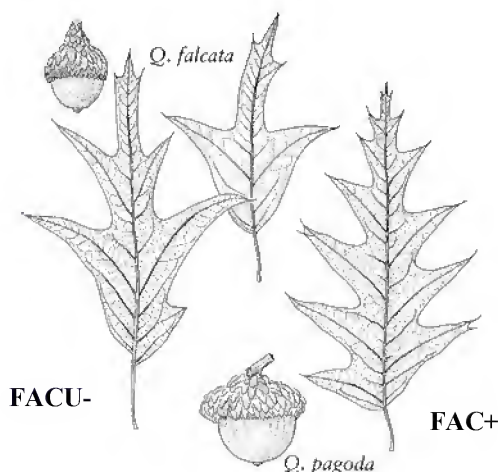
By Phillip Moore

Wetland scientists have assigned ranks to plant species that indicate how water tolerant each species is. These ranks are called the "wetland indicator status" of the species. The indicator status of each of the dominant species in a study plot allows the determination of hydrophytic vegetation, an important criterion for delineating wetlands. In 1988, the US Fish & Wildlife Service and the US Department of the Interior published these indicators in the *National List of Plant Species that Occur in Wetlands*.

Obligate (OBL) species are those that reportedly occur in wetlands more than 99% of the time. Facultative Wetland (FACW) species occur in wetlands more than 67% of the time (but not 99%). Facultative (FAC) species occur in wetlands between 33% and 66% of the time. Facultative Upland (FACU) species occur in wetlands less than 33% of the time. Upland (UP) species occur in wetlands less than 1% of the time. Vegetation is hydrophytic when more than 50% of the dominants species are OBL, FACW, or FAC.

There are four trees in Arkansas that are now recognized at the species level that were listed as subspecies or varieties in the 1988 *National List*. Using the incorrect indicator status for these species pairs could significantly alter a wetland determination.

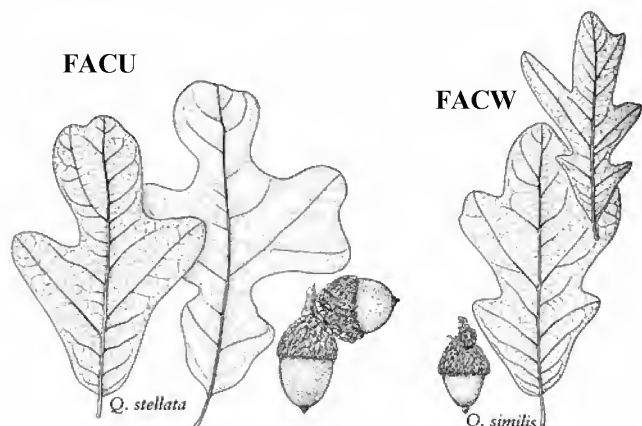
To separate these wetland species out from their upland sisters, location helps a lot, both geographically and ecologically.



Southern red oak and cherrybark oak

Cherrybark oak (*Quercus pagoda*) and southern red oak (*Q. falcata*) both have leaves that are fuzzy underneath with the

same kind of hairs, so they're closely related, but most trees are clearly one or the other species (with rare difficult in-between specimens). Most southern red oak leaves have a rounded base, often have only three lobes, and the middle lobe is often long and narrow. Cherrybark oak leaves are quite variable but usually have a wedge-shaped base and several lobes. Don't go by one or two leaves; look around on the tree for the more distinctive shape of many southern red oak leaves. If you can't find any of the typical 3-lobed, rounded base leaves of southern red oak then you can bet it's a cherrybark oak. Also, the younger bark of a cherrybark oak has horizontal streaking more or less resembling the bark of a cherry tree.



Post oak and delta post oak or swamp post oak

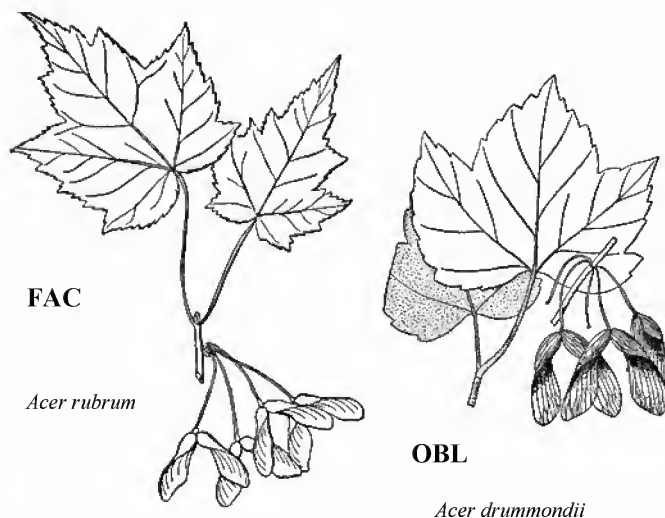
Don't make the mistake of calling a post oak (*Quercus stellata*) a Delta post oak (*Q. similis*) simply because it's in a wetland. I've seen post oaks growing in wetlands often enough, but there are a great many more growing in uplands (way more than 67% of them). If it looks like a post oak it is a post oak. Delta post oak has lighter colored, more shaggy appearing bark, and you have to look at several leaves to find any that look like the cross-shaped post oak leaves, while almost all of the leaves of post oak will be cross-shaped. Also, Delta post oak is found only in the south part of Arkansas and very rarely toward the middle part of Arkansas.

**For a complete version of the 1988
National List of Plant Species that Occur
in Wetlands, visit the following website:**

**[http://www.charttiff.com/WetlandMaps/
WetlandPlants/plantlists.html](http://www.charttiff.com/WetlandMaps/WetlandPlants/plantlists.html)**

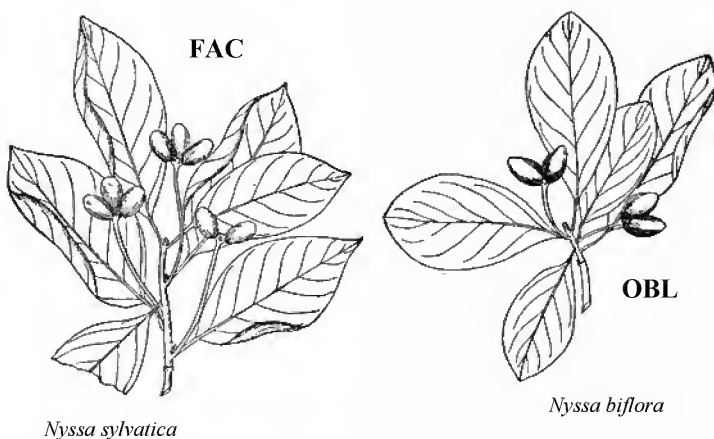
**For more info on Arkansas Wetlands,
visit the Arkansas Multi-Agency
Wetlands Planning Team website at :**

<http://www.mawpt.org/default.asp>



Red maple and Drummond's red maple or swamp red maple

Drummond's red maple (*Acer drummondii*) grows in swamps in the lowlands. If it's not growing in a swamp in the lowlands, it's red maple (*Acer rubrum*). The leaves of both are white below but that of red maple is a powdery white and that of Drummond's is tiny hairs.



Black gum and swamp black gum or swamp tupelo

Swamp tupelo is found in bays or seeps in southern Arkansas. If you're not in a bay, seep, depression, or swamp in southern Arkansas, it's black gum. Swamp tupelo has (1) 2 fruits per cluster and black gum has 2-4 (6) fruits per cluster. Note that both of these species are different from water tupelo (*Nyssa aquatica*) which grows in the wettest areas of swamps and sloughs, often with baldcypress.

Phillip Moore is the botanist with the Arkansas Department of Highways and Transportation. Contact him at Phillip.Moore@arkansashighways.com.

Upcoming Events

NOTICE: Many people join the Society to learn from other members and get the chance to explore unfamiliar areas of the state with a local guide. We need more people who are willing to lead field trips to areas they know. It isn't necessary to know every species on the route. We all bring our own knowledge and learn something every time we go out – even the trip leaders! Please contact the Claytonia if you would be willing to lead a trip. We know you have a special spot that is worth sharing...

The following hikes are mostly moderately strenuous; mostly level ground with slight slopes but some climbing is involved. Wear good hiking boots or shoes. We take our time on the hikes, as you know, as we spend a lot of time with our eyes to the ground. Bring plenty of water, insect repellent if you use it, and a brown bag lunch. The hikes range from 2 – 4 hours in length unless otherwise stated. We hope to see you there!

April 23: Chesney Prairie Natural Area (near Siloam Springs in Benton County) - botanical hike followed by dinner and annual prairie mole cricket count. Contact: Joe Woolbright. Meet at the Natural Area at 5:00 pm. For directions contact Joe at 479.427.4277 or visit the ANHC website at www.naturalheritage.org. Please let Joe know if you plan on attending.

April 30: Morning Star Mine (at Rush, Buffalo National River, Marion County) – hike. Meet at trailhead at 10:00 am. Contact: Burnetta Hinterthuer. For directions call Burnetta at

479.582.0317 or 479.430.0260.

May 7: Cave Mountain (Newton County) - hike. Meet at 10:00 am at parking area at upper Buffalo River, at base of Cave Mountain, just past bridge on Hwy. 21 south of Boxley. Contacts: Maria Morales & Miguela Borges.

June 18: All day field trip to explore the new Middle Fork Shale Barrens Natural Area and the igneous glades and barrens of the Bauxite area (Saline County). Join trip leaders Theo Witsell and John Pelton as we explore the Middle Fork Shale Barrens, the newest addition to the Arkansas Natural Heritage Commission's System of Natural Areas. We'll also get a detailed look at the highest quality nepheline syenite glades and barrens in the world as we visit The Nature Conservancy's Dry Lost Creek and Dunahoo Preserves. This trip will feature a number of globally rare species including the small-headed pipewort (*Eriocaulon kornickianum*), the Ouachita bluestar (*Amsonia hubrichtii*) and a species of *Sabatia* that is currently being described new-to-science and is known from just two sites in the world. This will be an all day field trip, visiting one site in the morning, having lunch at an area restaurant, and visiting the other site in the afternoon. We will meet at a single location and carpool since parking is limited at the sites. This trip may be restricted to a limited number of participants, but may be offered a second time to accommodate everyone who is interested. Contact Theo Witsell for more info: 501.324.9615 or email theo@arkansasheritage.org.

Arkansas Native Plant Society Membership Application

Please check the appropriate box below.

Membership Categories:

- ☐ \$10..... Student
☐ \$15..... Regular
☐ \$20..... Supporting
☐ \$25..... Family Membership
☐ \$30..... Contributing
☐ \$150... Lifetime Membership (55 and over)
☐ \$300... Lifetime Membership (under 55)

☐ New Member
☐ Renewal

☐ Address Change

NAME(S) _____

ADDRESS:

Street or Box _____

City _____

State _____ Zip Code _____

Telephone _____ - _____ - _____

Email address _____

Please cut and send this form along with any dues to:

Eric Sundell, Membership ANPS
Division of Mathematics and Sciences
University of Arkansas at Monticello
Monticello, AR 71655

Please check your mailing label! If your mailing label has an 04 or earlier it is time to renew!

Life members will have an **LF**.

Please fill in the information form on the opposite side of this page and send it with your renewals, applications for membership, changes of name, address, email, or telephone numbers to the address given on the form: **[Not to the editor]**. Thank you.

**PLEASE SEND SUBMISSIONS/SUGGESTIONS TO:
219 Beechwood St. / Little Rock, AR 72205
anpsclaytonia@yahoo.com**

2004-2005 ANPS OFFICERS

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Secretary: Jude Jardine.....501.676.5535
Treasurer: Barbara Little.....870.935.6905
Membership: Eric Sundell.....870.367.2652
Ark. Coalition: Carl Hunter.....501.455.1538
Awards/Scholarships: Eric Sundell
sundell@uamont.edu

The purpose of the Arkansas Native Plant Society is to promote the preservation, conservation, and study of the wild plants and vegetation of Arkansas, the education of the public to the value of the native flora and its habitat, and the publication of related information.

CLAYTONIA

**Theo Witsell, Editor
219 Beechwood St.
Little Rock, AR 72205**

anpsclaytonia@yahoo.com

CLAYTONIA

Newsletter of the Arkansas Native Plant Society

Vol. 25 No. 2

Summer 2005

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"Ozark Endemic" Missouri Bladderpod Discovered in the Ouachita Mountains



Missouri bladderpod (*Lesquerella filiformis*).
Izard County, Arkansas. Photo by John
Pelton.

This spring Sarah Nunn of the University of Arkansas Herbarium made a most remarkable find in Hot Spring County while doing field work for the Flora of Arkansas Project. She was collecting plants on land owned by the Ross Foundation in the southern part of the Ouachita Mountains where, in a shale glade that she was shown by Roy Bledsoe of the Ross Foundation, she collected plants of the federally listed Missouri bladderpod (*Lesquerella filiformis*). This collection was exciting enough given the global rarity of the species, but it was even more remarkable because it was a significant range extension for the species, 150 miles to the south of the nearest known site. It was also the first collection of the species outside of a narrow portion of the Ozark Mountains and the first on a substrate other than limestone or dolomite. Biologists from the US Fish and Wildlife Service and the Arkansas Natural Heritage Commission traveled to Fayetteville to examine the specimens and, upon agreeing that Sarah had indeed collected Missouri Bladderpod, visited the site in Hot Spring County with Roy Bledsoe.

Not only is the site far disjunct from the main range of the species, but it is home to a very large population, with over 100,000 plants (estimated) in 2005 occurring in five distinct glade openings, all part of the same complex. The site is very rich botanically, containing a number of other globally and state rare species including granite gooseberry (*Ribes curvatum*), Nuttall's cornsalad (*Valerianella nuttallii*), Arkansas twistflower (*Streptanthus maculatus* ssp. *obtusifolius*), and royal catchfly (*Silene regia*).

Missouri bladderpod is an annual plant in the mustard family (Brassicaceae or Cruciferae) that is restricted to calcareous glade habitat. Being an annual, its population size can fluctuate dramatically from year to year. Experiments in Missouri have found that prescribed burns of the habitat can dramatically increase populations, with the

population at one site going from hundreds of plants one year to hundreds of thousands the next year following an August fire.

Missouri bladderpod was first discovered in Arkansas in a glade in Izard County by Bill Summers of Missouri on a spring field trip of the Arkansas Native Plant Society several years ago. Botanists in Missouri were a little chapped about the find because Missouri Bladderpod was the only vascular plant species believed to be restricted to Missouri! It was later discovered that there was an overlooked specimen in the U of A Herbarium from Washington County, collected in a glade near Beaver Lake. This site was relocated in 2002 by botanists from Arkansas and Missouri. Since then two other sites were found in Izard and Sharp Counties by botanists from the Arkansas Natural Heritage Commission, the US Fish and Wildlife Service, the Missouri Department of Conservation, and the Missouri Department of Natural Resources. The species was reclassified in 2003 from “endangered” to “threatened” but is still federally protected under the Endangered Species Act and is of high conservation importance.

Fortunately the Hot Spring County site is in good hands. It is owned and managed by The Ross Foundation and was already identified by them as a special area. They are working with the Arkansas Natural Heritage Commission on further inventory of their lands and are very willing to manage for the rare habitats and species found at the site. Congratulations to Sarah Nunn and Roy Bledsoe for this important discovery!

Keep your eyes out for a yellow-flowered mustard with narrow leaves growing in limestone or dolomite glades in the Ozarks or shale glades in the Ouachitas. It blooms from late April through May and is readily identified by its four-petaled bright yellow flowers and its spherical seed pods about the size of a BB on a short stalk. If you think you’ve found it, please contact the Arkansas Natural Heritage Commission at 501.324.9615 or email theo@arkansasheritage.org.

Conway Earth Day Booth A Success!

By Brent Baker

As some of you were aware, I organized an ANPS booth for the Conway Earth Day Event that was held on Saturday April 23rd at the Faulkner County Fairgrounds. It was a beautiful, sunny day for the event, albeit a little on the windy side!! Thanks to Don Culwell and Jude Jardine for helping me work the booth. Also, thanks to Jane Gulley for donating the entrance fee.

We had ANPS brochures and copies of the *Claytonia* for people to pick up. We had some great conversations with

people about various issues regarding native plants. We also had a variety of native plants on hand for people to view and discuss. Thanks to Mary Ann King at Pine Ridge Gardens for loaning most of these. The native wisteria (*Wisteria frutescens*) sparked numerous discussions about ‘native vs. introduced’ plants; as did the native trumpet honeysuckle (*Lonicera sempervirens*) plants that we had for give-away. We owe thanks to Dr. K. C. Larson at the University of Central Arkansas for her donation of the honeysuckles [extras from her research comparing the native honeysuckle to the invasive Japanese honeysuckle (*Lonicera japonica*)]. We had a slideshow of native plants for viewing, although the bright sun did make the screen hard to see. It really was a great slideshow, though! I’m sorry it wasn’t more visible. Thanks to Theo Witsell and George Sinclair for some of the great photos.

As an added bonus, we also sold a handful of ANPS tee shirts and received a few monetary donations!

Again, thanks to everyone who contributed!

Memorial Edition of Claytonia Planned

The recent loss of several dear members of the ANPS has prompted the idea of publishing a memorial edition of the *Claytonia*. Members are encouraged to submit anecdotes, biographical information, tributes, photographs, poems, or other such material to Jason Anders by the end of October. Several of our charter members have died, and it would be nice to have a remembrance of some of their contributions, work, wit, and warmth in a collection for publication. If there is enough support for this project, it could be in print by year’s end.

Carl Hunter Memorial

The ANPS Executive Board is investigating the feasibility of honoring Carl Hunter by placing one of his books in every public library in Arkansas. In many cases, this would provide the library with a second copy that would free up one from the reference materials designation and allow it to be checked out. For others, it would simply provide an inaugural copy for those libraries.

More specifics will be discussed in the Fall Meeting at Ft. Smith. We welcome your ideas in helping implement this project if it is adopted.

PLANT OF THE ISSUE: PELTON'S ROSE-GENTIAN



Pelton's Rose-Gentian. Middle Fork Barrens Natural Area, Saline County. Photo by John Pelton.

Pelton's rose-gentian (*Sabatia arkansana* J.S. Pringle & C.T. Witsell) was described as a species new-to-science in an article by Dr. James Pringle and Theo Witsell in the August 5, 2005 issue of *Sida: Contributions to Botany*, making it the newest plant species to be described from Arkansas. It is known from just seven sites in the world, all in rare glade habitats in Saline County, Arkansas. It was first noticed by John Pelton, long-time ANPS member and nature photographer, who first found the plant in a remnant nepheline syenite (igneous) glade on land owned by the Alcoa Corporation, where he worked before he retired. John later found the plant growing in a roadside shale glade near Owensville and took me to that site in 2001 when I was beginning to collect plants for his Masters thesis.

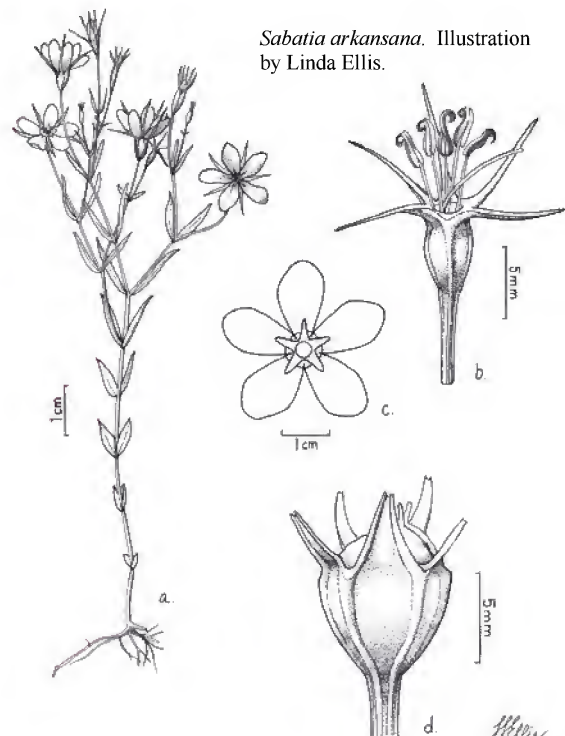
We collected specimens, which keyed out to the Texas rose-gentian (*Sabatia campestris*) in all the books, but true *S. campestris* also occurred at the Owensville site, and seeing the two species side by side made the differences between them seem obvious! It was instantly agreed that these were two different species. After a thorough literature review and the examination of *Sabatia* specimens at the U of A Herbarium and the Missouri Botanical Garden, I was even more convinced that we had a new species and teamed up with Dr. James Pringle at the Royal Botanical Gardens in Hamilton, Ontario, the world authority on the genus, for the formal description. I mailed him specimens and received an email from him shortly after saying he was having difficulty concentrating on his other work because he was so excited by the specimens I had sent—definitely a new species!

There are a number of noticeable differences between the two species including shorter stature, narrower leaves, darker flower color, and more rounded petals in *S. arkansana*. There are also noticeable differences in microhabitat selection

within the glades, with *S. arkansana* is seasonally wet, open flats fed by groundwater seepage and *S. campestris* on higher, drier sites. *S. arkansana* typically begins flowering 7 to 10 days before *S. campestris*, and *S. campestris* continues flowering at least 7 days after *S. arkansana*.

The common name of this uncommon plant is in honor of John, who was too humble to allow a formal scientific name to be given in his honor. He has been studying the flora of the state, and Saline County in particular, for years and had been suspicious about the plant since he first found it. The latin name recognizes the state to which it is apparently endemic.

Pelton's rose-gentian will be tracked as an Element of Special Concern by the Arkansas Natural Heritage Commission and will likely carry the conservation status rank of G1G2S1, making it among the rarest plants in both Arkansas and the world. Fortunately it is being protected and managed for at all of the known sites. The six glade openings near Bauxite are being protected by joint efforts of The Nature Conservancy and Alcoa Corporation. 136 acres of the shale barrens site near Owensville have been purchased by the Arkansas Natural Heritage Commission and were recently dedicated as the Middle Fork Barrens Natural Area which is open to the public for non-destructive use as part of Arkansas' System of Natural Areas. Surveys in appropriate habitat in Saline, Pulaski, Garland, Hot Spring, and Montgomery Counties have so far failed to locate additional populations. - *Theo Witsell*



Sabatia arkansana. Illustration by Linda Ellis.

An Orchid Trilogy

by Carl Slaughter, MD

2004 was a good year for orchids...

I. Northwest Arkansas



Oklahoma grass-pink orchid (*Calopogon oklahomensis*). Photo by Carl Slaughter.

In April I received a phone call from one of our members. We talked a while and the conversation turned to locations of various orchids.

"I manage a couple of prairies near Siloam Springs, and the Oklahoma grass-pink orchid (*Calopogon oklahomensis*) grows on them."

"How many are there?"

"A little over a thousand."

A little over a thousand! Obviously another "botanical estimate". A botanical estimate is where you count the number of flowering plants, multiply that number by 10, and then add 100 to that number. This would be the number that you would report that you saw. This calculation is used quite frequently. Seeing a little over 100 of these plants is considered a good day. A thousand, we'll see.

"I would love to see them. Could you call me when they bloom?"

"Yes."

"Thanks."

Mid May arrives, and I receive a phone call.

"The Calopogons are blooming."

"I'm coming up. A thousand eh, we'll see."

I travel to northwest Arkansas to a couple of prairies just outside Siloam Springs, and step into a paradise of over 1,000 *Calopogon oklahomensis* of various colors that have their non-resupinated faces clustered around prairie pimples (clumps or hills of dirt blown in at an earlier time).

Thank you Joe Woolbright. Siloam Springs.

II. Ompah, Canada

In 2003, at our North American Wild Orchid Conference, I showed a slide that I was very proud of. It was a double bloomed *Cypripedium reginae* (two blooms on the same plant). The presenter after me showed a triple. Doubles are hard to come by, but a triple? Out of this world! This aroused my competitive instinct.

"Where did you take this picture?"

"I took it in Ompah. There are some *Amerorchis rotundifolia* var. *lineata* there also."

"Where in the world is Ompah?"

"Ompah is in northeast Ontario, Canada."

The last orchid mentioned above instead of having small dots on its lip, has small lines. It's the latest rage, and not many people have seen a live plant. I received directions and made the 2004 trip plans. It took me four days to get there. It was worth the trip, even if my accommodations were one of ten rooms over a loud beer parlor without air conditioning and only one bathroom for the ten rooms.

First I saw the *Amerorchis*. Some with small dots, some with lines, and some with large blots, which I named "blothiana" on the spot. They had not previously been named. Then I found a single plant that showed all of the above colorations on the lip of its separate flowers. So much for my recently named variety, but also, so much for the *lineata* name. These findings would indicate that there are no varieties based on lip decoration. I am eager to report this at our 2005 meeting. Next came the triple Queen Lady's-slipper. I went to Purdon Fen and found a sign at the entrance that read: "This fen contains over 16,000 Queen Lady's-Slippers." 16,000!!! I walked into these 16,000 orchids praying. I expected to see Saint Peter at any moment. I just knew that I



Amerorchis rotundifolia. Ompah, Ontario. Photo by Carl Slaughter.



The triple-flowered Queen lady slipper (*Cypripedium reginae*).
Ompah, Ontario. Photo by Carl Slaughter.

had died and gone to heaven. On that day I photographed two triples, a double, and two singles in one slide. I also took pictures of abnormal forms and several white *Cypripedium reginae*. I had been looking for a white one for five years. I smiled all the way home, even in my sleep.

Thank you Shirley Curtis. New Hampshire.

III. 2004 Native Orchid Conference (Conway, South Carolina)

In August the North American Native Orchid Conference was held in South Carolina. Along with the lecture presentations we took field trips into West Virginia, Virginia, North Carolina, and South Carolina. We saw and photographed 15 different orchids. I added three new ones to my collection. We left for Myrtle Beach two days after a hurricane struck the Carolina coast, and departed the area two days before another one passed by.

We do have epiphytes outside of Florida and I photographed the green-fly orchid (*Epidendrum magnoliae*). Its specific name

used to be *conopseum* but it seems like they like to change orchids' names every ten years just to keep us on our toes and our books out of date.

My main photographic objective on this trip was *Platanthera Xbicolor*, the hybrid between *P. ciliaris* and *P. blephariglottis* var. *conspicua*. We found beautiful specimens just as we were leaving the Carolina area. I accused them of trying to make me suffer in making this the last orchid that we saw. I had made the trip three times in the past and not found it. It is a beautiful orchid in yellow and white.

In the deserted backcountry of North Carolina's Green Swamp, we returned to a previously visited spot to retrieve glasses that had been left behind. In the middle of this swampy field, holding up the lost glasses of my Arizona friend was a mutual orchid friend from Pennsylvania, along with an orchid friend from Virginia who was the latest to have an orchid named after him. Orchids must be hard to find to have a diversity of people from all over the U.S. having to go to a single spot in North Carolina to photograph them.

Earlier we had photographed the water spider orchid (*Habenaria repens*), under the watchful gaze of a nearby alligator.

Every orchid has its own story, but I will devote this space to only one more. *Corallorhiza bentleyi*, a cleistogamous orchid (an orchid that fertilizes itself without the flowers ever opening) is found in only a couple of areas in Virginia and West Virginia. It was the main orchid of this conference, and with its namesake leading us we had no problem in finding it.

Rain was forecasted for our last day and I told my wife that if it rained we would probably be home early. Her reply was that she had never known of rain keeping orchid photographers from taking pictures. The last picture that I took was of my friends standing in the rain in the middle of the highway talking about "next year". I had to tell my wife that my orchid friends not only didn't know when to get in out of the rain, they didn't know that they shouldn't play in traffic.

THANK YOU
FRIENDS
ACROSS
AMERICA

Thank you God
for 2004.



Bentley's coralroot (*Corallorhiza bentleyi*).
Virginia. Photo by Carl Slaughter.

List of Endemic Plants of the Interior Highlands Published

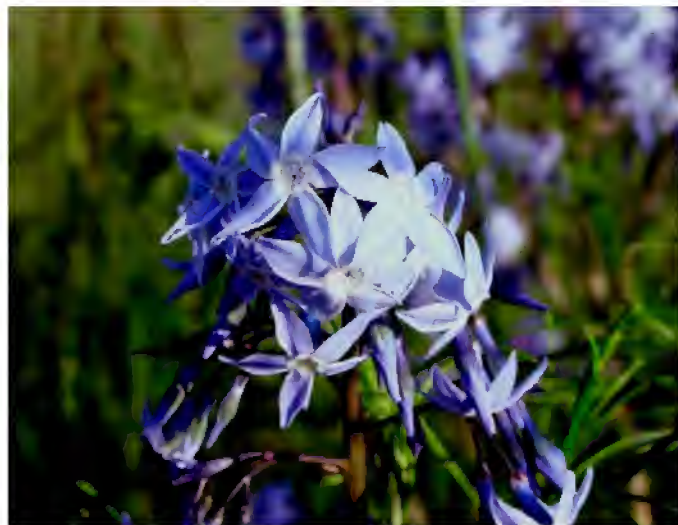
When species are known only from a specific geographic area or habitat, they are said to be endemic to that area or habitat. Endemism is an important aspect of biogeography, rarity, and effective conservation planning. The following list of 36 endemic vascular plants of the Interior Highlands was published in the latest issue of *Sida: Contributions to Botany*. The list was compiled by Douglas Zollner (The Nature Conservancy, Arkansas), Douglas Ladd (The Nature Conservancy, Missouri), and Michael and Barbara MacRoberts (Bog Research, Louisiana). Taxa appearing in boldface type are tracked as Elements of Special Concern by the Arkansas Natural Heritage Commission.

APOCYNACEAE

Amsonia hubrichtii Woods.

ASTERACEAE

Echinacea paradoxa var. *paradoxa* (J.B.S Norton) Britt.
Liatris squarrosa (L.) var. *compacta* Torr. & A. Gray
Polymnia cossatotensis A.B. Pittman & V. Bates
Solidago ouachitensis C. & J. Taylor
Vernonia lettermannii Engelm. ex A. Gray



The Ouachita bluestar (*Amsonia hubrichtii*). Endemic to rocky streams in the Ouachita Mountains. Photo by Craig Frasier.

BRASSICACEAE

Cardamine angustata O.E. Schulz var. *ouachitiana* E.B. Smith
Lesquerella filiformis Rollins
Streptanthus maculatus ssp. *obtusifolius* (Hook.) Rollins
Streptanthus squamiformis Goodman

CAPRIFOLIACEAE

Viburnum ozarkense Ashe

COMMELINACEAE

Tradescantia longipes E.S. Anderson & Woods.
Tradescantia ozarkana E.S. Anderson & Woods.

CYPERACEAE

Carex latebracteata Waterfall

FABACEAE

Amorpha ouachitensis Wilbur

FAGACEAE

Quercus acerifolia (Palmer) Hess & Stoyanoff

HYDROPHYLLACEAE

Hydrophyllum brownei Kral & Bates

LAMIACEAE

Monarda fistulosa ssp. *fistulosa* L. var. *stipitatoglandulosa*
 comb. nov. ined.
Scutellaria bushii Britt.

IRIDACEAE

Nemastylis nuttallii Pickering

POACEAE

Elymus glaucus Buckley ssp. *mackenzii* (Bush) J.N. Campbell

PTERIDACEAE

Pellaea glabella Mett. ex Kuhn ssp. *missouriensis* (Gastony)
 Windham

RANUNCULACEAE

Delphinium newtonianum D.M. Moore
Delphinium treleasei Bush ex K.C. Davis

RUBIACEAE

Galium arkansanum A. Gray var. *arkansanum*
Galium arkansanum A. Gray var. *pubiflorum* E.B. Smith
Houstonia ouachitana (E.B. Smith) Terrell

SAXIFRAGACEAE

Heuchera villosa Michx. var. *arkansana* (Rydberg) E.B. Smith

Saxifraga palmeri Bush

Saxifraga virginensis Michx. Var. *subintegra* Goodman

SCROPHULARIACEAE

Agalinis nuttallii Shinnars

Penstemon cobaea Nutt. var. *purpureus* Pennell

VALERIANACEAE

Valerianella longiflora (Torr. & A. Gray) Walp.
Valerianella nuttallii (Torr. & A. Gray) Walp.
Valerianella ozarkana Dyal
Valerianella palmeri Dyal

In addition to the 36 taxa listed above, the paper acknowledges six species of hawthorns (*Crataegus* spp.) listed by Kartesz as being endemic to the region as well as others that have been proposed. These were excluded from the official list since there is some debate regarding the validity of these species and a limited understanding of this difficult genus. Ozark witch hazel (*Hamamelis vernalis* Sarg.) was excluded on the basis of reports that it occurs in SE Texas, and the authors mention that a revision of the genus *Talinum* currently underway may result in two additional endemic species to the Interior Highlands flora.



The Ouachita scaly blazing star (*Liatris squarrosa* var. *compacta*) is endemic to glades and rocky, open woodlands in the Ouachita Mountains. Photo by Craig Frasier.

The Interior Highlands as defined in this study includes the Ozark Plateau (Arkansas, Oklahoma, Missouri, Kansas, and Illinois) and the Ouachita Mountains including the Arkansas Valley (Arkansas and Oklahoma). The original paper also includes discussion of the range and habitat of each taxon as well as descriptions of the subregions and habitats of the Interior Highlands. For the original paper see:

Zollner D., M. H. MacRoberts, B. R. MacRoberts, and D. Ladd. 2005. Endemic Vascular Plants of the Interior Highlands, U.S.A. *Sida* 21(3): 1781-1791.

New ANPS Members

The following people have joined the Arkansas Native Plant Society since the last issue of Claytonia:

Larry Buford Jr. (Taylor, AR)
Kelly Chitwood & Rick Burson (Camden, AR)
W. A. Daniel & Family (Camden, AR)

Polly Davis (Severna Park, MD)
Karl Estes (Batesville, AR)
Craig Frasier (Hot Springs, AR)
Bob & Sandra Gamble (Stephens, AR)
Ann Gordon (Chester, AR)
Raymond Higgins (El Dorado, AR)
Gelene MacDowell (Fort Smith, AR)
Gayla Mann (Crossett, AR)
Ben Mattocks (Little Rock, AR)
Margaret Morgan (Conway, AR)
Diana Neal / Delta Rivers Nature Center (Pine Bluff, AR)
Lynn Powell (Knoxville, AR)
Maxine Ray (Havana, AR)
Lee Ruble (Camden, AR)
Amanda Scissell (Beebe, AR)
Karen Seale (Little Rock, AR)
John Stephens (Monticello, AR)
Reggie Talley (Hazen, AR)
Philip Alan Thompspon (APO AA 34023-3111)
Meredith York (Stephens, AR)
Douglas Zollner (Little Rock, AR)

The following members joined in 2004 but the list was misplaced by the editor and they were not mentioned in the Claytonia. My apologies to them:

Kevin Allen (Shreveport, LA)
Bill Barksdale (Cotter, AR)
Jimbo Bray (Carlinville, IL)
Patricia Brown (Hot Springs, AR)
Linda Chambers (Little Rock, AR)
Luke Garrett (Bentonville, AR)
Lucy Mothershead (Flippin, AR)
Gail Northcutt (Stuttgart, AR)
Jimmyly Syme (Mountain Home, AR)
Joe Woolbright (Siloam Springs, AR)

We welcome all of these new members to the ANPS!

Claytonia Available Online

Thanks to ANPS Webmaster, Ron Doran, the Claytonia is now available on the web as a high-resolution, full-color PDF file. Anyone with access to the internet and Adobe Acrobat Reader software can view or print the Claytonia. You can also email it to friends, etc. The ANPS website also has a link to a free download of the Adobe Acrobat Reader software. Select articles and announcements will also be available on the web in html format, but without the color photos and other graphics in the Claytonia.

Many thanks to Ron for his commitment to keeping the website up to date and sincere apologies from the editor for not getting him articles and announcements in the past. Check out the website if you haven't in a while: www.anps.org.

ARKANSAS NATIVE PLANT SOCIETY FALL 2005 MEETING

SEPTEMBER 30 - OCTOBER 2, 2005

Rose Room Creekmore Park 31st St. & Rogers Avenue Fort Smith, AR

Everything is lining up for what looks to be an exciting Fall Meeting in Ft. Smith. Our meetings Friday and Saturday will be held in the Rose Room at Creekmore Park. The park is located at the intersection of Rogers Ave. and 31st St. If you are looking it up on Mapquest, etc., use 3301 South M St. for the office's physical address; it faces a street other than Rogers Ave. This location should prove easily navigable as it is a straight shoot down Rogers Avenue (2.25 miles) from our hotel, the Holiday Inn City Center.

We have 20 rooms reserved at the Holiday Inn City Center, 700 East Rogers Ave., and can get more rooms if members reserve **no later than September 9th**. (the editor apologizes for the short notice). After that date, the special discount will no longer apply (although rooms may be still available.) The group rate is \$68 per night, before 14.25% taxes, for either a king bed or two doubles. You must mention ANPS when reserving your room to get this discounted rate. There is no surcharge for extra guests, so BRING a FRIEND already even!

Registration will held at Creekmore Park in the Rose Room Friday from 4-6 p.m.

At 7:00 we will promptly begin our annual plant auction. PLEASE REMEMBER to bring seeds, plants, dried herbs, books, magazines, gardening gloves, trowels, pots, preserves/preserves/jellies, bird houses, hiking poles, hats, photographs, and most importantly, YOUR CHECKBOOKS for this worthy cause. Our dear friend Carl Amason worked so cheerfully to promote this fundraiser; let's make an extra effort this year and support it with our plants and donations, as well as bidding.

The field trips Saturday morning will depart from the Holiday Inn City Center parking lot at 8:00 a.m., as the Creekmore Park building won't be available for our use again until 6:00 p.m. Saturday night. Please gather early enough to allow field trips to actually depart at 8:00 without worrying about leaving anyone behind.

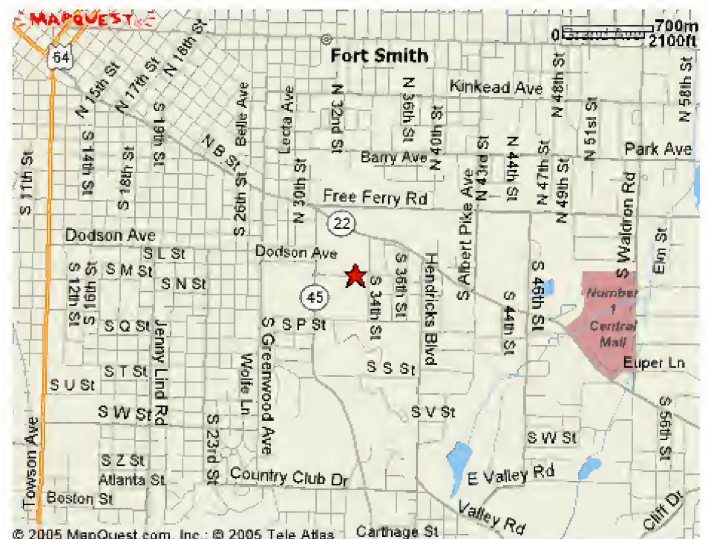
Our field trips are still being finalized, but we know we'll include the walking path that is along Arkansas River downtown and is maintained by the National Parks Service. Dr. Dan Marsh and I walked it in the summer and we met a park ranger who welcomed ANPS assistance in helping identify some of the many trees along the route (more than 50). We also hiked at the Natural Dam area, and there are a couple of other sites members are suggesting that we will have more detail about at the meeting.

The program following the Business Meeting Saturday night will feature our own Larry Lowman. Larry is currently working with the Arkansas Game and Fish Commission to promote Environmental Education at several of their site. He will also present information on the isolation and selection of native plant cultivars for commercial introduction.

The map below shows a star where Creekmore Park is located in Ft. Smith. It lies just south of Rogers Avenue (shown as Highway 22 in this map.) The meeting room can be approached by turning South on either 31st St. or 34th St. in order to get over the one block to the park office. Rogers Avenue is found easily as it is a main exit off I-540. Please call or email Jason Anders if you need more specific driving directions:

jasonanders@earthlink.net or Jason.anders@aerojet.com

Work Phone: 870-574-3353; Home Phone: 870-836-0452



MORE INFO & LODGING ON NEXT PAGE...

Creekmore Park
The Rose Room
3301 South M Street
Ft. Smith, AR 72903
(479) 784-2368

LODGING:
Holiday Inn City Center
700 East Rogers Avenue
Ft. Smith, AR 72901
(479) 783-1000
\$68 per night, +tax
(Mention ANPS, must
reserve **NO LATER**
THAN 9-9-05 FOR
DISCOUNT)

Pets allowed with
additional charge.

ADDITIONAL LODGING:
Motel 6
1716 Fayetteville Road
Van Buren, AR 72956
\$37 per night, +tax, single
occupancy
(Actually on Ft. Smith outskirts)
(479) 474-8001

Comfort Inn
3131 Cloverleaf St.
Van Buren, AR 72956
(479) 474-2223

First Ever Arkansas Sedge ID Workshop a Success!

For the first time in Arkansas history, 30 people gathered for two days at the University of Arkansas at Fayetteville for a sedge identification workshop, focusing on Arkansas sedges. The workshop was sponsored by the Arkansas Natural Heritage Commission and the University of Arkansas Herbarium. It was the first of its kind in Arkansas, focusing on using keys and field characters to identify all 17 genera of sedges known from Arkansas.

Instructors were Dr. George Yatskievych (Missouri Department of Conservation), Dr. Paul McKenzie (U.S. Fish and Wildlife Service), Dr. Johnnie Gentry (U of A Herbarium), and Theo Witsell (Arkansas Natural Heritage Commission). Participants identified fresh and dried specimens of 14 genera of Arkansas sedges and inspected herbarium specimens of the remaining three genera. The workshop also included a field trip each day of the conference. At the end of the workshop the participants, working in teams of two, competed in a series of keying contests where they were given unknown, often difficult specimens and keys and raced to be the first team to correctly identify the plants. Winners (and the specimens they identified) were:

- 1) Marissa Williams & Jennfier Ogle: *Bulbostylis capillaris*
- 2) Jimmie Rogers & Robert McElderry: *Lipocarpa micrantha*
- 3) Jeremy Whisenhunt & Jerry McGary: *Rhynchospora scirpoides*
- 4) Rusty Scarborough & Diana Neal: *Eleocharis flavescens*

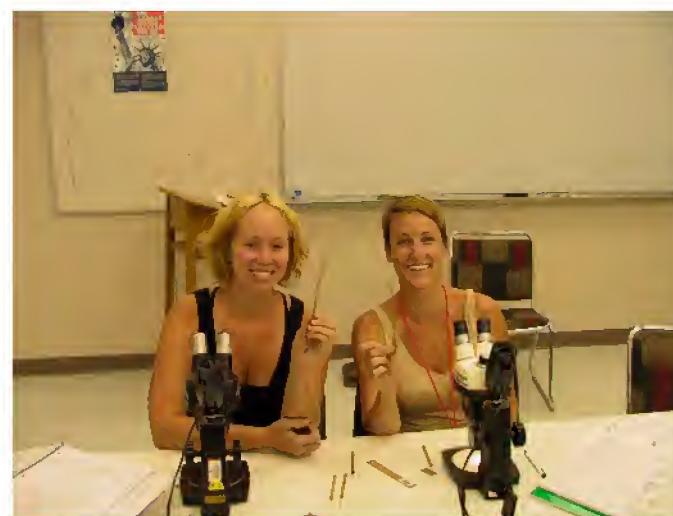
There is talk of another workshop happening in 2006 focusing on the Asteraceae (Compositae), the Fabaceae (Leguminosae), or some other family of Arkansas plants.



Participants pay close attention as Dr. George Yatskievych explains the finer points of the genus *Cyperus*. Photo by Theo Witsell/ANHC.



"Sedges have edges, Rushes are round, Grasses have joints (when the cops aren't around)". Fresh material of *Cyperus*, *Fimbristylis*, *Kyllinga*, and *Eleocharis* for the class. Photo by Theo Witsell/ANHC.



Workshop participants and ID Contest winners Marissa Williams and Jennfier Ogle hold up specimens of the "mystery sedge" *Bulbostylis capillaris*. Photo by Theo Witsell/ANHC.

ARKANSAS NATIVE PLANT SOCIETY

SPRING 2005 GENERAL MEETING MINUTES

**South Arkansas University Tech
Charles O. Ross Center
Camden, Arkansas
15 April 2005**

President Burnetta Hinterthuer opened the General Meeting and asked for a motion to accept the minutes of the autumn meeting at Greer's Ferry as reported by Jason Anders in the Spring issue of the Claytonia. Barbara Little so moved, Jude Jardine seconded, and the motion carried without dissent.

Barbara passed out copies of the financial statement and Burnetta asked for a motion to accept it. Jude Jardine so moved, the motion was seconded, and carried without objection.

The financial statement was later retracted when Jason Anders so moved after discovering an error. Barbara will correct the error and resubmit the amended financial statement for publication in the next Claytonia. The General Membership will vote on accepting the amended financial statement at the autumn meeting.

Burnetta brought several issues previously discussed by the Executive Board to the general membership.

The Executive Board discussed the procedure for selecting scholarship and award recipients and agreed that it is somewhat unclear. The Board tasked Jason Anders to rewrite Article V: Section 9 so that it clearly states that members of the Awards and Scholarship Committee cannot receive either an award or scholarship while serving on the committee.

Jason will rewrite Article V: Section 9 and submit it for publication in Claytonia. The General Membership will vote on the new Section 9 at the autumn meeting.

Changes to the Arkansas Native Plant Society brochure were discussed at the Board meeting. Theo Witsell was tasked by the Board to edit the brochure for factual content and to make a four-fold format that will allow the inclusion of a membership application in the brochure. He will also discuss printing the brochure with Carl Hunter's son.

The death of long-time member Carl Hunter was made known to all Board members and a means of memorializing him was discussed. The board discussed placing hardbound copies of Carl's Wildflowers of Arkansas book in school or public libraries. The Board thought this would be a fitting memorial to Carl's long-time effort to introduce school students to the world of plants. Jason Anders was tasked with determining the cost of placing copies in either schools or public libraries.

The board also discussed funding the distribution of Carl's book and decided that fundraising was preferable to using existing funds.

The General Membership voted to raise the funds to place a hardbound copy of Carl Hunter's Wildflower book in every high school library if costs are not prohibitive. Fundraising efforts will be announced in Claytonia.

Theo Witsell told the General Membership that he intends to publish the Claytonia on a quarterly basis, and that he would appreciate contributions.

Eric Sundell presented four nominees for the Aileen McWilliam Scholarship and the General Membership voted to grant \$750 to Raven Dawson who plans to study wetland forests and Robert McEldery who will be conducting research on two rare plant species in the Quachitas. The General Membership also voted to give scholarships of \$500 to Gary Mentur who will be studying the distribution of Spotted Knapweed and to Marissa Williams who will be studying the medicinal qualities of *Perilla frutescens*.

Burnetta also asked the board to consider the need for a Public Relations person. The Board agreed that Public Relations is not included in any of the offices ANPS currently fills, and a suitable person should be found who will accept that role.

The Board decided to hold the autumn meeting in Fort Smith. The exact location and field trip sites will be announced in the Claytonia.

Submitted by Jude Jardine, Secretary

Items Up For General Membership Vote at 2005 Fall Meeting

As stated in the Spring 2005 minutes, the following proposed amendment to the By-laws and approval of the revised 15 April 2005 Financial Statement will be voted on by the general membership at fall meeting. Please read through and be prepared to vote if you attend the Fall Meeting:

The following revision of Section 9 of the by-laws is proposed:

Section 9. Scholarships & Awards Committee Chair

The Scholarship & Awards Committee Chair shall organize and direct the annual search for recipients of the Society's awards, grants, and scholarships. The Scholarship and Awards Committee shall be constituted by at least two other Society members, one from the Executive Board, and one member from the general membership.

For scholarships and grants, the Chair shall convene a committee to ensure applications are solicited from all Arkansas colleges and universities which might have eligible researchers and students. Applications shall be reviewed by the Committee which shall present recommendations to the Executive Board prior to the meeting of the general membership. Final recommendations are presented by the Committee to the general membership for approval vote in either the Spring or Fall Meeting.

The Committee shall also work with the general membership and the Executive Board to solicit nominees for awards of the Society. The Committee will recommend the awards to the Executive Board for approval. The awards will be announced at the next meeting of the general membership.

In the event that a member of the Executive Board becomes an applicant for a Society scholarship or grant, or is a nominee for an award, that member shall become ineligible to serve on the Scholarship & Awards Committee during that scholarship or award cycle

The following revised Treasurer's Report is to replace the one handed out at the Spring 2005 Meeting and will be up for approval at the Fall 2005 Meeting.—Ed.

Treasurer's Report April 15, 2005 – REVISED

Operating Account:

Balance brought forward from 9/25/04:	\$27,446.86
Balance ANPS Operating Fund 9/25/04	\$(7,902.35)

Receipts (Income):

Annual membership dues:	\$770.00
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Two (2) life memberships:	\$300.00
Fall Meeting Registration:	\$276.00
Plant Auction:	\$825.00
Honoraria/memorials:	\$183.00
T Shirt sales:	\$264.00
Interest (9/04-4/05):	\$174.41
Income Subtotal:	2,792.41
Balance forward 09/25/04 + receipts:	\$30,239.27

Expenses:

Fall Meeting Expenses	
Miscellaneous:	\$13.00
Burnetta:	\$32.06
Speaker's lodging:	\$48.00
Peace Lutheran Hall:	\$200.00
Claytonia:	\$687.31
Membership Directory:	\$291.47
Carl Amason Conservation Award:	\$500.00
Arkansas Vascular Flora Project Grant:	\$5,000.00
T Shirts purchased:	\$321.00
Expenses Subtotal:	\$7,092.84

Current balance 04/15/05: Total:	\$23,146.43
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Subtract Scholarship and Awards funds:	\$21,749.51
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ANPS Operating Fund 04/15/05:	\$1,396.92
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ANPS SCHOLARSHIP, FLORA & AWARDS FUNDS (4/15/05)

Dwight Moore Award Fund

Balance 9/25/04	\$4,460.78
Supporting Memberships	\$5.00
Balance 4/15/05	\$4,465.78

Aileen McWilliam Scholarship Fund

Balance 9/25/04	\$7,868.24
Auction Proceeds	\$825.00
Balance 4/15/05	\$8,693.24

Delzie Demaree Research Grant Fund

Balance 9/25/04	\$8,215.49
Contributing Memberships	\$75.00
Two (2) lifetime members'	\$300.00
Balance 4/15/05	\$8,590.49

Scholarship, Flora & Awards Fund Grand Total:	\$21,749.51
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*Many eyes go through the meadow,
but few see the flowers in it.*

-Emerson

Spring Field Trip Recipes

By Thera Lou Adams

Members of the ANPS who attended a field trip to Thera Lou Adams' gardens at the 2005 Spring Meeting requested that the following recipes, which she made and served, be printed in the Claytonia:

Chewy Molasses Camp Cookies

1 ¼ c. sugar	1 tsp. soda
½ c. margarine, melted	1 tsp. salt
2 eggs	2 c. quick cooking rolled oats
6 T. molasses	½ c. chopped nuts
1 ¾ sifted flour	1 c. seedless raisins
1 tsp. cinnamon	

Mix everything together. Drop by teaspoonful on greased baking pan. Bake at 400 degrees for 8 or 10 minutes. Yield: About 5 dozen cookies, 2 ½ inches in diameter.

Swedish Tea Logs

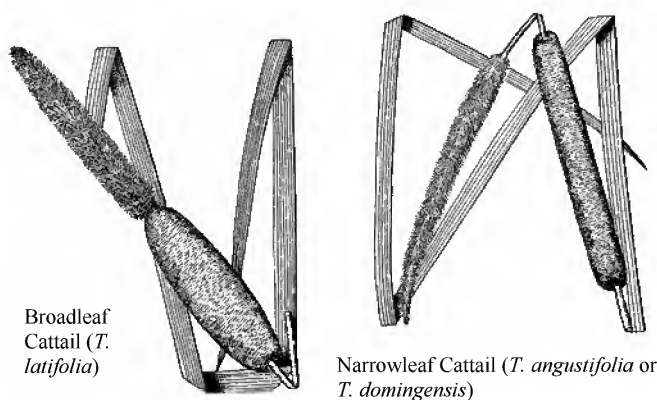
1 pkg. dry yeast	<i>Filling:</i>
¼ c. warm water	5 T. margarine
2 ¼ c. flour	2/3 c. dark brown sugar
¼ cup sugar	½ c. nuts (optional)
1 tsp. salt	<i>Glaze:</i>
½ c. firm margarine	3 T. margarine
¼ c. canned milk	1 tsp. vanilla
1 unbeaten egg	3 T. canned milk
1/3 c. raisins	1 cup powdered sugar

Sprinkle yeast on top of water in a bowl. Mix in flour, sugar and salt and cut in margarine until mixture is the size of pea gravel. Add dissolved yeast, milk, egg and raisins and mix thoroughly. Cover and chill for two hours or overnight. Divide dough into three equal parts. Roll each into a 6 x 12 inch rectangle. Mix filling mixture, having margarine at room temperature. Spread on each rectangle and roll up starting with 12 inch side. Place sealed side on bottom of foil-lined pan, crescent-shaped and slash top of each log 4 times. Let rise in warm place about 45 minutes or until double in size. (I use the oven as rising place by turning on one minute at 150 degrees.) Bake in 350 degree oven about 20 minutes or until golden brown. To make glaze, brown margarine in heavy pan. Remove from heat; add powdered sugar, vanilla and enough milk for spreading consistency. Spread on warm rolls. Note: Thera Lou is famous in Camden for this wonderful log!

Cattails & Flags

By Phillip Moore

Just about everyone recognizes cattails. There are three species of cattails in North America, and they all hybridize with each other. These hybrids have become so common that they have even been named *Typha x glauca*. Evidently, narrowleaf cattail, *T. angustifolia*, is an old world species that was introduced early in the colonial days. Unfortunately, botanists didn't recognize exotic narrowleaf cattails separately from native narrowleaf cattails (*T. domingensis*) until recently. Meanwhile, *T. angustifolia* eventually spread westward from the seacoasts and formed aggressive hybrids with the native species. *T. domingensis* has been dubbed "southern cattail" to distinguish it from narrowleaf cattail. *T. angustifolia* and its hybrids should be considered invasive. Since *T. domingensis* invades nutrient-enriched wetlands, it too has been considered invasive.

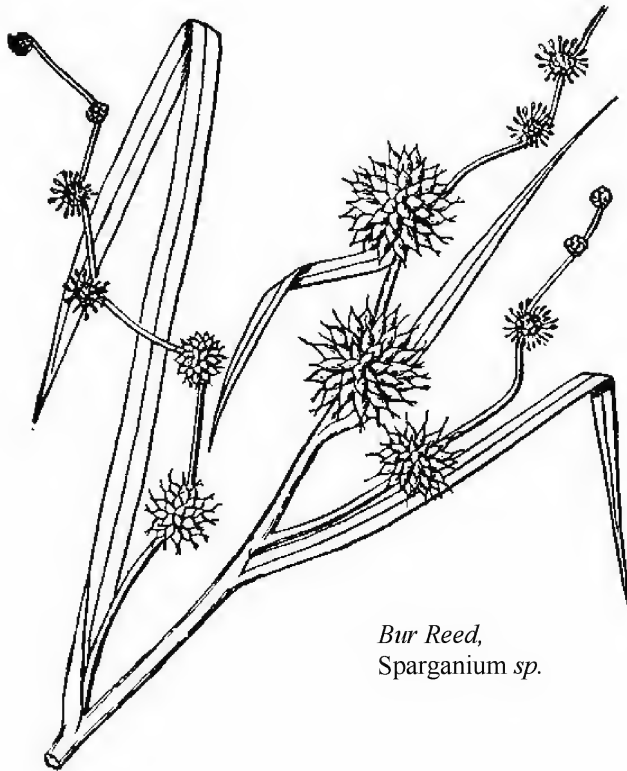


The easiest species to identify is broadleaf cattail (*T. latifolia*). The upper male or staminate spike is typically not separated from the female or pistillate spike (but it can be). Additionally, its leaves are up to about an inch wide and its spikes are over an inch thick. Narrowleaf cattail (*T. angustifolia*) leaves are only about a half-inch wide, its spikes are only three quarters of an inch thick, and there's a gap between the male and female spikes. Perhaps the most reliable field characteristic of southern cattail (*T. domingensis*) is mucilage glands from inside the sheath continue for a short distance up the inside of the leaf. In general, southern cattail is a very tall plant and the spikes are about as tall as the leaves. The spikes of narrowleaf cattail are usually much exceeded by the leaves. Additionally, southern cattail spikes are light brown, or cinnamon, while narrowleaf cattail spikes are medium to dark brown. One additional characteristic to check is the prominent "ears" or auricles on the sheaths of narrowleaf cattail. If you're still not sure you probably have a hybrid. You could try the key in *Flora of North America* Volume 22, which can be viewed on the Internet. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=134063

Other plants in Arkansas that form cattail-like wetland colonies are sweetflag, bur reeds, and irises. All of these plants have a wetland indicator of “Obligate,” which means that they occur in wetlands more than 99% of the time. Wetland scientists call areas with a predominance of emergent herbaceous plants *marshes* and reserve the term *swamp* for forested wetlands. A *flag* is any marsh plant that has sword-shaped (ensiform) leaves.

Although all of these plants have leaves that are sword-shaped in outline, they each have different cross-sections. Cattail leaves are flat to crescent shaped, bur reed leaves are keeled on one side, sweetflag “leaves” are somewhat keeled on both sides, and iris leaves are strongly folded together (conduplicate).

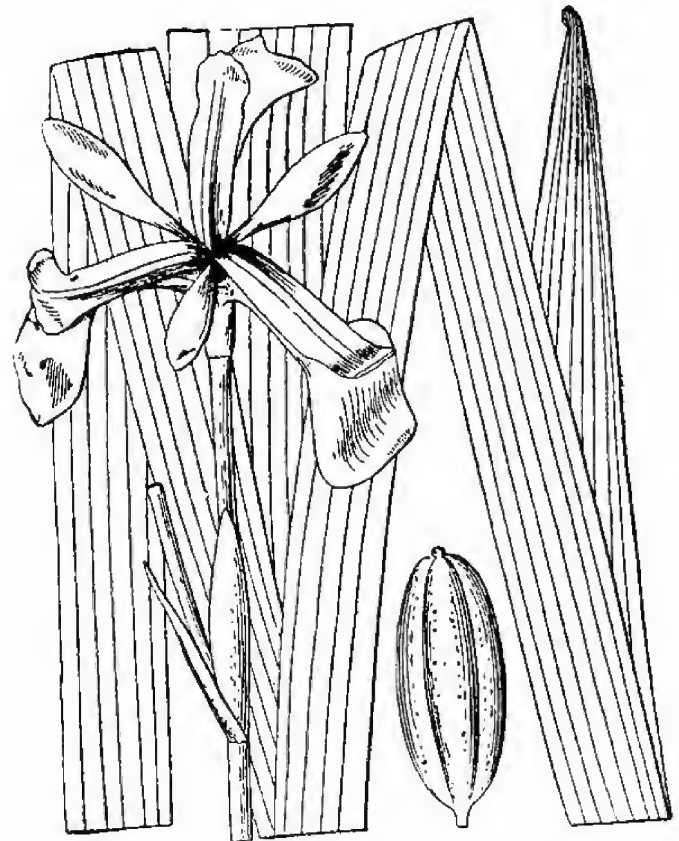
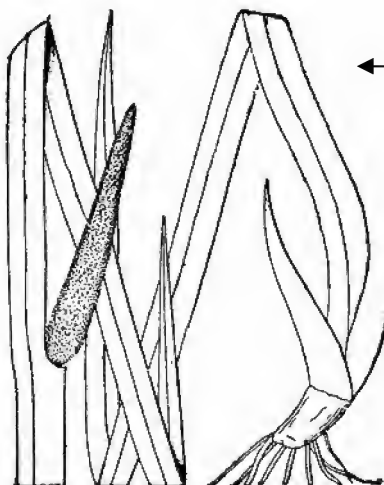
americanus, its range is Canada south to Iowa. Our populations are the European *A. calamus*, which was introduced by early European settlers. Although the plant is sterile, its rhizomes propagate easily.



Bur Reed,
Sparganium sp.

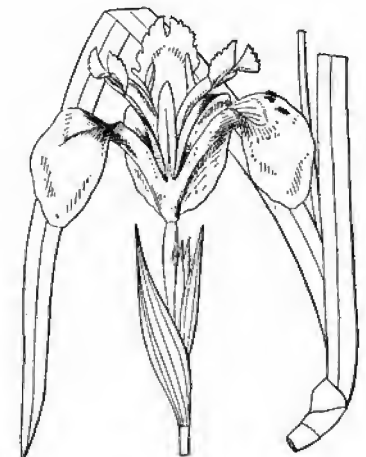
Bur reeds are shorter than cattails, usually about three feet tall. The individual beaks of the bur-like fruits of *Sparganium americanum*, are short (3-5 mm), while the beaks of the fruit of *S. androcladum* are longer (4-6 mm). Leaves of *S. americanum* are flat or weakly keeled and not very stiff; leaves of *S. androcladum* are stiff and strongly keeled.

Sweetflag is a cattail-like plant growing to about five feet tall, with a flower spike positioned laterally on edge of the plant. The plant has a distinct sweet perfume when crushed. Although there is a native sweetflag, *Acorus*



Southern Blue Flag, *Iris virginica*

Although there are a number of iris species in Arkansas, only two form colonies in wetland marshes (or roadside ditches): the native blue flag, *Iris virginica*, and the introduced yellow flag, *I. pseudacorus*. Iris leaves are very flatly folded together lengthwise (conduplicate). These plants grow to about three feet tall, and can, of course, be identified by the very showy blue or yellow flowers.



Sweetflag,
Acorus calamus

Yellow Flag,
Iris pseudacorus

Phillip Moore is the botanist with the Arkansas Department of Highways and Transportation. Contact him at : Phillip.Moore@arkansashighways.com.

Notes from the Editor

Two of the Arkansas Native Plant Society's most active and long-term members, Carl Hunter and Carl Amason, passed away since the last issue of *Claytonia*. Both of these men did a lot for the Society and for the flora of The Natural State. Carl Hunter was best known for his three field guides to the plants of Arkansas: Wildflowers of Arkansas, Trees, Shrubs, and Woody Vines of Arkansas, and Autumn Leaves and Winter Berries of Arkansas. He was also known for his tireless work promoting the use of native wildflowers in gardens and landscaping throughout the state and his efforts to get the Arkansas Highway Department to encourage and manage for native wildflowers along their extensive rights-of-way. Carl Amason was best known for his amazing botanical knowledge and collections of plants from around the world (including many Arkansas natives) in his sprawling gardens at his home near Calion, Arkansas. Carl always opened his gardens to Society members and anyone else who wanted to stop by and explore. He was also revered for his skills as the official (and wonderfully entertaining) auctioneer at the fall meetings of the Arkansas Native Plant Society.

Both of these men were influential in shaping my path in studying the flora of Arkansas and deciding to pursue a career in botany, ecology, and conservation. They both took me out in the field and shared with me some of the great deal that they knew about plants. I remember when I first moved back to Arkansas and began to develop a real interest in plants. I decided on learning all the trees and shrubs first and bought a copy of Carl Hunter's tree book. I wore it ragged in the field, writing where and when I found each species in the margin. Eventually I got caught in the rain and the book fell apart so I cut it up and made flashcards from the photos to keep sharp. I also bought his wildflower book, studied it for years, and still use it all the time. I even made audio tapes to learn the common and scientific names of all of the plants in his books.

Later I met Carl in person and was struck by his down-to-earth demeanor and passion for native plants. He treated me like an equal, not like some novice kid (which I was), and I was most grateful for that. He invited me to his home to see the hundreds of species of wildflowers he had planted. "I have something blooming every month of the year" he would say. And he did. He was always happy to share seeds and plants. One night a few years back we shared a room at the Ozark Natural Science Center where we were giving a joint presentation and wildflower walk to a group of high school students. We stayed up late, me soaking in Carl's stories about his years studying botany under Dr. Dwight Moore, working as Assistant Director of the Arkansas Game and Fish Commission, and as the manager of a large farm in east Arkansas. Carl was also a poet and an author of non-botanical books, including his own version of the legend of King Arthur.

Everyone seemed to know Carl Amason. I met him at my first state meeting of the ANPS in Monticello. He was generous both with his incredible knowledge of plants and by paying for my lunch. He also treated me as an equal and was very down-to-earth. He encouraged my interest in our native flora and reassured me that a lifetime committed to conservation would be fulfilling and rewarding. His knowledge of plants was unequaled. I remember a couple of years ago when biologists at the Buffalo National River found a very showy species of purple-flowered aroid growing around an historic cabin that they were restoring. They couldn't figure out what species it was and neither could I, nor could any other professional botanists that I knew. Finally I remembered that Carl Amason knew more about obscure and unusual plants than anyone I knew. I mailed him a photo of the plant in question and immediately received a phone call from Carl with the proper ID and a wealth of information about the species including where it was native, when it bloomed, what pollinated it, etc. He, of course, had grown it at some point and knew all about it. I had heard a lot about his amazing gardens and was glad to finally get a chance to go and see them at the 2005 Spring Meeting. A newspaper article in the *Arkansas Democrat-Gazette* following his death that characterized him as a reclusive hermit who shunned people in favor of plants was completely wrong. He loved to share his passion for plants and entertained people from all over.

Though these great plant lovers have passed away, their legacies live on in the lives of the many people that they touched and inspired. It is up to us to carry on their vision and good works. I am honored to have known and learned from them both.



Carl Hunter listens patiently at the Fall 2004 ANPS Meeting as I pick his brain on sites where we might find rose turtlehead (*Chelone speciosa*) in northeast Arkansas. Carl knew of a site for just about any plant in the state and was always glad to help someone find what they were looking for. Photo by Clint Sowards.

If you have any stories or memories of Carl Amason, Carl Hunter, or any other ANPS members who are no longer with us, please consider submitting something to the upcoming memorial issue of the *Claytonia*.

Announcements, Memorials, & Upcoming Events

NOTICE: Many people join the Society to learn from other members and get the chance to explore unfamiliar areas of the state with a local guide. We need more people who are willing to lead field trips to areas they know. It isn't necessary to know every species on the route. We all bring our own knowledge and learn something every time we go out – even the trip leaders! Please contact the Claytonia if you would be willing to lead a trip. We know you have a special spot that is worth sharing...

September 16-18: Dr. Eric Sundell is offering a tree identification workshop for beginners and intermediates, sponsored by the Arkansas Audubon Society, meeting for three days at Ferncliff Camp in Ferndale, west of Little Rock. Dates are Sept. 16-18, Friday noon to Sunday noon. Anyone interested should make a reservation with Barry Haas at bhaas@sbcglobal.net or 501-821-4097. And he'll have information on cost of meals and accommodations for non Little Rock folks (modern motel rooms). Ferncliff is perfect for the workshop: last year participants keyed and identified 67 species of trees, shrubs, and woody vines!

September 30-October 2: Fall Meeting of the Arkansas Native Plant Society. See meeting announcement in this issue.

October 15: Cave Mountain (Newton County) Hike. Meet at 10:30 am at parking area at upper Buffalo River, at base of Cave Mountain, just past bridge on Hwy. 21 south of Boxley. The trip will tour around Wild Magnolia above Beech Creek. This forest has a beech/umbrella magnolia composition and offers a very rich, moist habitat for plant growth. Bring comfortable shoes, water, and a sack lunch. The hike is mild to moderate in most places but there are more strenuous parts to explore. Contact: Burnetta Hinterthuer: 479.582.0317 or 479.430.0260.

Don Crank has made donations to the Flora of Arkansas Project in memory of ANPS members Gail Carlson Clearwater, Carl Hunter, and Carl Amason.

Memorials for Carl Amason can be made to the South Arkansas Arboretum. They have plans to use any memorial funds to replace the existing gate at the entrance. Currently there is a chain link gate. They plan on substantial posts with attractive, sort of rustic wooden gates. A plaque honoring Mr. Amason will be included. Memorials should be made to: South Arkansas Community College Foundation / 300 South West Ave. / El Dorado, AR 71730. Checks should be marked "Carl Amason Memorial".

Arkansas Native Plant Society Membership Application

Please check the appropriate box below.

Membership Categories:

- ☐ \$10..... Student
- ☐ \$15..... Regular
- ☐ \$20..... Supporting
- ☐ \$25..... Family Membership
- ☐ \$30..... Contributing
- ☐ \$150... Lifetime Membership (55 and over)
- ☐ \$300... Lifetime Membership (under 55)

- ☐ New Member
- ☐ Renewal
- ☐ Address Change

NAME(S) _____

ADDRESS:

Street or Box _____

City _____

State _____ Zip Code _____

Telephone _____ - _____ - _____

Email address _____

Please cut and send this form along with any dues to:

**Eric Sundell, Membership ANPS
Division of Mathematics and Sciences
University of Arkansas at Monticello
Monticello, AR 71655**

Please check your mailing label! If your mailing label has an 04 or earlier it is time to renew!

Life members will have an **LF**.

Please fill in the information form on the opposite side of this page and send it with your renewals, applications for membership, changes of name, address, email, or telephone numbers to the address given on the form: **[Not to the editor]**. Thank you.

**PLEASE SEND SUBMISSIONS/SUGGESTIONS TO:
219 Beechwood St. / Little Rock, AR 72205
anpsclaytonia@yahoo.com**

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The purpose of the Arkansas Native Plant Society is to promote the preservation, conservation, and study of the wild plants and vegetation of Arkansas, the education of the public to the value of the native flora and its habitat, and the publication of related information.

CLAYTONIA

**Theo Witsell, Editor
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